SITE INVESTIGATION

Samoset Laundry

902-924 North Avenue
Plainfield, Union County, New Jersey
EPA ID #: NJN000206302

Volume I of I

New Jersey Department of Environmental Protection
Site Remediation Program
Bureau of Environmental Measurements and Site Assessment

September 2009

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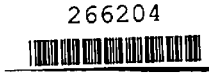

Samoset Laundry
A.k.a. First Avenue Cleaners, Jet Plastics, Walker Roofing
902-924 North Avenue
Plainfield, Union County, New Jersey
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NARRATIVE

SITE INVESTIGATION REPORT

PART I: GENERAL INFORMATION

Site Name: Samoset Laundry
AKA: First Avenue Cleaners Corporation, Jet Plastics, Walker Roofing
Address: 902 - 924 North Avenue
Municipality: Plainfield **State:** NJ **Zip Code:** 07003
County: Union
Latitude: + 40.628462 **Longitude:** - 74.405698
USGS Quadrangle: Chatham, N.J. (Map 1)
EPA ID No.: NJN000206302
Acreage: 2-acres **SIC Code:** 7219

Block: 344 **Lot:** 1
Current Property Owner(s) /Business Operator(s): Phil Suydam of 908 to 924 North Ave LLC
Mailing Address: 32 North Avenue
City: Fanwood **State:** NJ **Zip Code:** 07023
Telephone No.: 908-578-2102

Block: 344 **Lot:** 2
Current Property Owner(s) /Business Operator(s): Robert Finne of Finne Building & Investment Co.
Mailing Address: 1340 South Avenue
City: Plainfield **State:** NJ **Zip Code:** 07062
Telephone No.: 908-822-1573

The subject property addressed in this Site Investigation (SI) was a laundromat known as Samoset Laundry facility located at 902-924 North Avenue in Plainfield, New Jersey. (Map 5)

Owner/Operator History:

The subject property is listed on the City of Plainfield Tax Records as located on Block 344 (prior block 131), Lot 2 (prior lot 6). (Map 2) The below table itemizes the owner/operator history of the property.

NAME	OPERATOR/ OWNER	DATES	
		FROM	TO
Block 344, Lot 1 (Formerly Block 131, Lot 6)			
Century Rubber Company	Operator	1908	1924
Milton Unger	Owner	Unknown	1926
Offley T. Brown et. al.	Owner	1926	1926

Originally, the Samoset laundry facility occupied Block 131, Lot 6 on the City of Plainfield Tax map; however, the property was subdivided around 1976 into two (2) lots and renamed Block 344, Lot 1 and Lot 2. According to interviews with the current site owners Mr. Finne and Mr. Suydam, the main building that housed the Samoset dry cleaning operation was located on Lot 1. Lot 2 was used for parking of laundry delivery trucks associated with the facility.

A 1910 Sanborn Fire Insurance (Sanborn) Map indentified Century Rubber Trading Company on the subject property. The Century Rubber Trading Company was depicted as a single story building with a Mill and Tire Room. The 1951 and 1955 Sanborn Maps identified three (3) single-story commercial buildings on the subject property. The largest building was identified as the "Laundry" of Samoset Laundry Incorporated. The other buildings were located on the perimeter of the property lines. (Map 6 and Attachment A) At that time, the surrounding properties consisted of domestic dwellings to the north and west, an auto repair facility to the north, the railroad of New Jersey to the east, and the Walker-Turner Hardware Manufacturer to the southwest.

According to the Plainfield City directories, the Samoset Laundry Service started operations in 1927 at 902-924 North Avenue, Plainfield, New Jersey. The 1962 Union County Business Directory identified Samoset Laundry Service Incorporated operated a launderers and dry cleaners at 902 North Avenue, Plainfield, New Jersey since 1927. (Attachment B) The 1982 Union County Business Directory did not have a listing for the Samoset Laundry facility.

The Samoset Laundry facility operated at the subject property from 1927 to about 1983. In 1984, Phillip and Janice Walker purchased Lot 1 of the Samoset property. The Walkers operated a roofing business on the property and leased out a portion of the property to Jet Plastics. It is unknown what type of manufacturing was performed by Jet Plastics. The Walkers filed for bankruptcy and the City of Plainfield took over the property. The current property owner is Phil Suydam of 908-924 North Avenue LLC. He received the property in 1995 from the Superior Court of New Jersey. According to Mr. Suydam, the City of Plainfield had obtained the property from the former owners due to unpaid taxes and then sold the property to Mr. Suydam at a tax sale. According to Mr. Suydam, the building was vacant when he acquired the property from the City of Plainfield and that the previous owner had used the property to sell roofing materials. Mr. Suydam stated that the City of Plainfield wanted the building torn down, so he had gutted out the building prior to demolition. Mr. Suydam stated that he only tore out overhead gas heaters, there were no boilers, aboveground tanks and pipes associated with underground tanks within the building. After demolition, portions of the building foundation were dug out to a depth of around 2- to 6-feet bgs and laterally about 5- to 6-feet. Mr. Suydam stated that they did not encounter any signs of underground storage tanks (USTs) around the building foundation. He had also stated that the City of Plainfield's Fire Department told him USTs were located around the building, but he did not find any tanks during demolition/excavation activities.

Lot 2 of the Samoset Property was purchased in 1979 by Mr. Robert Finne of Finne Building and Investment Company. The Finne Company is the current owner. The Finne Company operates a construction contracting business and utilizes the property to park the heavy equipment.

The NJDEP does not have any records regarding chemicals used at or by the Samoset facility. It is unknown if former operations previously utilized and disposed of tetrachloroethylene (PCE) based solvents at the facility. As part of a NJDEP investigation of regional ground water contamination, the NJDEP Division of Water Resources (DWR) inspected the Samoset laundry facility on September 26, 1985. (Attachment C) The NJDEP, DWR identified the following areas of Concern (AOCs) on the property:

- Floor drains in a "Tank Room" discharging to drainage pit on the outside of the building,
- Drainage pit potentially discharges to the ground water;
- Abandoned production well on the property; and
- A fuel oil and two (2) gasoline USTs on the property.

Between 1985 and 1986, the NJDEP, DWR collected soil samples from the collection drains located within the tank room, from the drains located at the northeast end of the building and within the drainage pit. Soil laboratory analytical results identified PCE at concentrations above the NJDEP Residential SRS Criteria of 2 ppm. In 1986, NJDEP, DWR collected water within the production well and the drainage pit located on the former Samoset property. Laboratory analytical results of water collected from the drainage pit identified PCE and TCE at concentrations above or equal to the NJDEP GWQS of 1 ppb for PCE and TCE.

The Union County Office of Health Management, Environmental Division began inspections in 1989 within the City of Plainfield as part of the County Environmental Health Act (CEHA). According to this agency, no inspections were made at the address associated with the subject property.

A review of the City of Plainfield's Bureau of Fire Prevention (BFP) and Health Department (PHD) records identified that the property utilized USTs and above ground storage tanks (ASTs) at the site. This is discussed in more detail in the BUST Section of this Report.

In 1991, Environmental Waste Management Associates (EMWA) representatives performed a site inspection and subsurface investigation on the former Samoset property on behalf of Crestwood Savings. At the time of the investigation the property was being occupied by Jet Plastics. The EMWA inspection report, dated March 25, 1991, summarizes the inspection results and the installation of test pits to determine the locations of suspected USTs at the site. (Attachment D) Tests pits identified a 2,000-gallon gasoline UST, a 10,000-gallon #2 fuel oil UST, a 1,000-gallon UST of unknown content and a 550-gallon UST of unknown content. A total of ten (10) soil samples were collected from the UST test pits and submitted for laboratory analysis.

EMWA stated that the laboratory analytical results of soils collected around the USTs with unknown contents had identified aromatic and chlorinated hydrocarbons compounds, including trichloroethane (TCE), benzene and xylene. EMWA reported the laboratory analytical results in total concentrations for VO's as high as 3,728 ppm and BN's as not-detected above the laboratory detection limits (MDLs) in the March 1991 report. It is unknown whether individual compounds exceeded the NJDEP Residential Soil Cleanup Standards. EMWA concluded that a discharge to the subsurface from the USTs with unknown contents had taken place. The NJDEP does not have any records for the removal of any USTs or ASTs on the subject property.

G.C. Environmental (GC), Incorporated prepared a Phase I Environmental Assessment (Phase I) Report, dated May 20, 2004, for T-mobile of a proposed antenna site at 908 North Avenue, Plainfield, New Jersey. (Attachment E) The proposed antenna site was to be located in the northeastern portion of Lot 1. GC identified that the "site" consisted of a 600-square foot gravel line piece of land and a 45-foot linear gravel lined piece of land on the subject property. According to the Phase I Report, the Samoset Laundry facility was located at 902 North Avenue with a NJDEP listing as "a site with on-site contamination." GC also identified Jet Plastics as being located at 902 North Avenue in Plainfield. The Jet Plastic property was identified as a property with two (2) 550-gallon tanks and soil contamination on the site. The GC's Phase I Report recommended that a "Limited Phase II Environmental Site Assessment be performed in order to determine potential releases from petroleum products or hazardous materials that were associated with current or historical usages on the property." GC issued a Limited Phase II Environmental Site Assessment (Phase II) Report, dated July 13, 2004, for the proposed antenna site. (Attachment F) GC's Phase II Report summarized subsurface soil sampling activities performed on the site. Two (2) soil samples were collected from the location of the telecommunications tower and the utility line on the subject property. The soil sampling activities, as reported by GC, did not identify any constituents above the NJDEP soil standards. GC recommended that no additional investigation, remediation or disposal procedures be performed at the site. A detailed description of the soil data is provided in the Soil Exposure Section of this report.

In February and August 2009, NJDEP, Bureau of Environmental Measures and Site Assessment (BEMSA) personnel performed site inspections of the subject property and surrounding properties. The subject property is a rectangular lot covered by asphalt and gravel. The majority of the property is used for parking of construction vehicles and storage of materials like wood, gravel, machine parts and large storage containers. There are three (3) permanent structures on the property. The first structure is a storage shed located along the eastern property boundary and the second is newly constructed single-story building. The single-story building is built on a slab on grade concrete pad and was not occupied at the time of the site inspections since construction was still underway. This new building is located along the eastern property boundary adjacent to the storage shed. The third permanent structure on the property is a telecommunications tower located along the northern property boundary. The telecommunications tower is located about 75 feet east of the entrance to the property. The subject property is secured by a fence and locked gate. The metal-mesh fence borders the property boundary providing a separation from the adjacent commercial and residential properties. The NJ Transit rail line borders the eastern boundary.

BEMSA personnel noted that large quantities of raw materials and industrial equipment are stored on the subject property. No evidence of ASTs, USTs, drums, or hazardous chemicals were observed on or adjacent to the subject property; however, several storage containers are located on the property. These containers were not inspected since they were not accessible to NDJEP personnel. The public utilities for the area include gas, electric and water. Public water and sewer lines are connected to the new single-story building on the property. The equipment associated with the telecommunications tower is powered by underground electric lines.

AOC SUMMARY TABLE

AOC Name	Source Type	CERCLA Exempt	Physical State	Waste Quantity
Floor Drains	Other	No	Liquid/Solid	Unknown
Tank Room: Solvent Storage	Tanks	No	Liquid	1,200-gallons
Drainage Pit/Rear of Building	Other	No	Liquid	Unknown
Underground Tanks: Unknown Storage	Tanks	No	Liquid	13,550-gallons

PART III: PERMITS

A. NJPDES

There are no NJDEP records of a NJPDES permits being issued to the Samoset Laundry Inc.

B. New Jersey Air Pollution Control Certificates

There are no records of NJDEP air permits issued to the Samoset Laundry Inc.

C. BUST Registration

Registration No.: None Identified
No. of Tanks: 4

Tank No.	Capacity (gallons)	Contents of Tank	Status
1	10,000-gallon	Fuel Oil	Suspected UST abandoned in place, not-in-use
2	2,000-gallon	Gasoline	Suspected UST abandoned in place, not-in-use
3	1,000-gallon	Unknown	Suspected UST abandoned in place, not-in-use
4	550-gallon	Unknown	Suspected UST abandoned in place, not-in-use

No registration information was found within the NJDEP, Bureau of Underground Storage Tanks (BUST) database; therefore, the listed USTs may never have been registered with the State of New Jersey.

As part of a NJDEP investigation of regional ground water contamination, the NJDEP, DWR inspected the Samoset laundry facility on September 26, 1985. (Attachment C) The NJDEP, DWR identified the presence of a 10,000-gallon fuel oil UST, a 2,000-gallon gasoline UST and 550-gallon gasoline UST on the property.

The DWR conducted a review of the Plainfield Bureau of Fire Prevention records for the Samoset facility. The Plainfield Bureau of Fire Prevention records identified that the facility held permits for the following: 2,500-gallon mineral spirits UST, 2,000-gallon clean solvent UST, a 550-gallon naphthalene AST, 550-gallon stoddard solvent AST and 100-gallon perchloroethelene AST.

The EMWA inspection report, dated March 25, 1991, summarizes the inspection results and the installation of test pits to determine the locations of suspected USTs at the site. (Attachment D) Several test pits were installed to the rear of the property and on the east side of the building. The tests pits identified a 2,000-gallon gasoline UST, a 10,000-gallon #2 fuel oil UST, a 1,000-gallon UST of unknown content and a 550-gallon UST of unknown content. The gasoline UST was noted to contain approximately 30 gallons of product while the fuel oil UST contained approximately 4,000 gallons of product. EMWA noted that soils around the gasoline and fuel oil USTs appeared to be free of staining and petroleum odors. A total of six (6) soil samples, four (4) from the gasoline and two (2) from the fuel oil USTs, were collected from the UST test pits.

The two (2) USTs of unknown contents were located by EMWA test pits on the east side of the building on the subject property. EMWA noted the following: both fills and vents were broken off, they were filled with a mixture of sand and water, soil staining in the test pits and a strong solvent odor within soils associated with each test pit. A total of four (4) soil samples, two (2) from each UST test pit, were collected and submitted for laboratory analysis.

All soil samples collected around the USTs were analyzed for VO's, Base Neutrals (BN's) and Total Petroleum Hydrocarbons (TPH). Laboratory analytical results for the soil samples collected from the gasoline or fuel oil USTs did not report TPH concentrations above the 1,000 parts per million (ppm) NJDEP Residential Soil Standard for TPH. EMWA stated that the laboratory analytical results of soils collected around the USTs with unknown contents had identified aromatic and chlorinated hydrocarbons compounds, including TCE, benzene and xylene. EMWA reported the laboratory analytical results in total concentrations for VO's that ranged from non-detect to as high as 3,728 ppm in the March 1991 report. EMWA reported that total concentrations of BN's were not-detected above the laboratory MDLs in the March 1991 report. It is unknown whether individual compounds exceeded the NJDEP Residential Soil Cleanup Standards. EMWA concluded that a discharge to the subsurface from the USTs with unknown contents had taken place. As stated previously, the NJDEP does not have any records for the removal of any USTs or ASTs on the subject property.

D. RCRA Status (TSD, Generator, Protective Filer, etc.)

The subject property was not listed under RCRA.

E. Other Permits (RCRA, NRC, etc.)

None issued.

PART IV: SOIL EXPOSURE

Describe soil type. Include soil series, composition of the soil and permeability of the soil.

The United States Department of Agriculture, Soil Conservation Service, Soil Survey of Union County, New Jersey states that the site is located on Urban Land. This soil association occurs in

urban areas, which are described as surfaces covered by pavement, concrete, buildings and other structures underlain by disturbed and natural soil material. The permeability is unknown for this soil association, permeability is related to the soil series, which is not documented for this site. (Attachment G)

For each sampling event, state the sampler and date of sampling and list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications. Tabulate sample numbers and the associated Area of Concern or describe sample location. Identify samples which establish background conditions.

On December 16, 1985, NJDEP, DWR performed a facility inspection and soil sampling event at the former Samoset laundry facility. DWR personnel sampled soil from the collection drain on the northeast side of the building and from the drain in the tank room. A follow-up soil sampling event was conducted in April 23, 1986 by NJDEP, DWR. Soil samples were collected from a sand-filled abandoned fuel oil UST, within a drainage pit at 3-feet bgs and approximately six (6) feet north of the drainage pit at 6-feet bgs. Soil sample laboratory analytical results are described in the next section.

EMWA representatives performed a site inspection and subsurface investigation on the former Samoset property on behalf of Crestwood Savings in February and March 1991. The EMWA Site Inspection/Subsurface Investigation letter, dated March, 25, 1991 summarizes the inspection results. (Attachment D) EMWA personnel confirmed the presence of four (4) USTs and sampled soils around each UST at the site. Soil sample locations and results are discussed in the BUST Registration Section of this report.

GC performed soil sampling in June and July of 2004 as part of a Limited Phase II for T-mobile at the proposed antenna location on the subject property. (Attachment F) Four (4) soil borings were installed at locations associated with the telecommunications tower and the utility line. The soil borings were advanced with a hydraulically powered soil probing unit called a Geoprobe® to approximately 22-feet bgs, where refusal was encountered due to the presence of shale. A single boring was advanced to a depth of 30-feet bgs using an air-rotary drilling method. Ground water was not encountered in any of the soil boring locations. Soil boring intervals were screened with a photoionization detector (PID) and no elevated readings were detected in any of the soil intervals. The deepest soil samples were collected from locations B-1 and B-4 and were submitted for laboratory analysis. The soil samples were submitted for VOC, Semi-VOC, BN, eight (8) RCRA Metals and polychlorinated biphenyl (PCB) analysis. Laboratory analytical results of soil samples B-1 and B-4 indicated that concentrations were either non-detect or detected below the associated laboratory minimum detection limits. GC recommended that no additional investigation, remediation or disposal procedures be performed at the site.

On August 17, 2009, NJDEP, BEMSA collected eleven (11) soil samples at the site utilizing a Geoprobe®. (Map 3) Each soil boring was advanced at 4-foot intervals with each interval screened utilizing a PID. A soil sample was collected from the interval with the highest PID reading. (Attachment H) During soil boring advancement, BEMSA encountered a thick concrete layer at

about 2- to 3-feet bgs at random locations across the site. The current owner of the property, Mr. Suydam, had stated that he had encountered the concrete during demolition and excavation activities of the former Samoset building. According to Mr. Suydam, the concrete is up to several feet thick and had been reinforced with metal ties that may be associated with an old railroad system. Mr. Suydam also stated that the concert layer runs through the eastern portions of the site, which corresponds to the rear of the former Samoset building. Soil borings were installed and soil samples were collected at the following locations:

Sample No.	Sample Depth*	Location related to Area of Concern (AOC) (Map 3)
S-1	3.0 to 3.5	Southeast corner of property, location of former Tank Room AOC
S-2	10.0 to 10.5	Southeast corner of property, location of former Tank Room AOC
S-3	8.5 to 9.0	Southeast corner of property, location of former Tank Room AOC
S-4	7.0 to 7.5	Middle of property, eastern portion of former building pad associated with potential drains and USTs
S-5	7.5 to 8.0	Center of location of former building, associated with potential drains
S-6	5.0 to 5.5	Middle of property, eastern portion of former building pad associated with potential drains and USTs
S-7	9.5 to 10.0	Middle of property, eastern portion of former building pad associated with potential drains and USTs
S-8	7.5 to 8.0	Northeast portion of property along northern side of former building associated potential drains and USTs
S-9	3.0 to 3.5	Northeast portion of property along northern side of former building associated potential drains and USTs
S-10	3.0 to 3.5	Northeast portion of property along northern side of former building associated potential drains and USTs
S-11	7.5 to 8.0	Duplicate sample of S-5

* Sample depth is reported as feet below ground surface.

The samples were analyzed for volatile organic compounds (VOCs) by EPA Region 2 Laboratory located in Edison, New Jersey. Data validation was performed by the USEPA. The laboratory data package with the validation information is included as Attachment I.

Tabulate contaminants identified in the soil. Include sample number, depth, contaminant levels and corresponding NJDEP Soil Cleanup Standard. Discuss contaminants identified in the soil above background and remediation standards and provide the rationale for site attribution. State whether Level 1 or Level 2 contamination is present.

Analytical results of soil samples are depicted in the table below.

NJDEP Soil Sampling Events Former Samoset Property, Plainfield, New Jersey				
	Chemical Name			
	Benzene	1,2-DCE	PCE	TCE
NJDEP Direct Contact Residential SRS / Nonresidential SRS	**2 / 5**	**230 / 1,000**	**2 / 5**	**7 / 20**
NJDEP DWR: December 16, 1985				
Tank Room	NR	0.12	ND	ND
Drainage Pit	NR	5.67	**7.29**	0.70
NJDEP DWR: April 23, 1986				
Drainage Pit	ND	0.18	**28**	4.02
Boring 6-ft from Pit	ND	ND	1.20	ND
Sand-filled UST	**82.0**	ND	ND	ND
NJDEP BEMSA: August 17, 2009				
SB-1*	ND	ND	0.95	ND
SB-5	ND	ND	1.10	ND
SB-11*	ND	ND	0.22	ND

NOTES: DCE = Dichloroethene, PCE = Tetrachloroethylene, TCE = Trichloroethylene
* Duplicate soil sample collected from SB-1, Concentrations are in parts per million (ppm)
Bold and highlighted boxes indicate exceedances of NJDEP Direct Contact Soil Remediation Standards (SRS).
ND = Not detected above the laboratory method detection limit (MDL)
DWR= Division of Water Resources, BEMSA = Bureau of Environmental Measurements and Site Assessment

Soil analytical results from the NJDEP, DWR soil sampling event in 1985 and 1986 identified the compound PCE at concentrations of 7.29 ppm and 28 ppm; respectively, within the drainage pit soils associated with the former Samoset laundry building. This concentration is above the NJDEP Direct Contact Residential and Non-Residential Soil Remediation Standards (SRS) of 2 ppm and 5 ppm, respectively.

Laboratory analytical results for the 2009 sampling event reported concentrations of PCE in SB-1 and SB-5; however, the reported concentrations are not above the NJDEP SRS. Laboratory analytical results of soil sample location SB-10 did not report PCE concentrations above the laboratory MDLUS in the 2.5- to 3.0-foot interval and represents a background concentration. Soil sample location SB-1 was collected at the southeast corner of the former building that corresponds to the location of the former AST tank room and location SB-5 was collected within the centerline of the building footprint where potential drains had been located under the facility. Based on the historical and current soil sampling results, a release to soil of PCE attributable to the site has been documented above background and the NJDEP SRS.

Total area of surficial contamination in square feet:

No surficial samples were collected.

If no soil sampling has been conducted, discuss areas of potentially contaminated soil, areas that are visibly contaminated or results from soil gas surveys.

Soil sampling was conducted at the facility.

Number of people occupying residences or attending school or day care on or within 200 feet of the site: 10
Number of workers on or within 200 feet of the site: 5
Number of on-site employees: 1

Identify terrestrial sensitive environments within 200 feet of observed contamination.

There are no terrestrial sensitive environments within 200 feet of the site.

Determine if any commercial agriculture, silviculture, livestock production or grazing are present within 200 feet of observed contamination.

There is currently no agricultural, silviculture, livestock production or grazing conducted within 200 feet of this site.

A. HYDROGEOLOGY

Describe geologic formations and the aquifer(s) of concern. Include interconnections, confining layers, discontinuities, composition, hydraulic conductivity and permeability.

The site is located in the Piedmont Physiographic Province. The site is underlain by the Plainfield glacial outwash deposits. These surficial deposits are yellowish-brown to reddish-brown sand interbedded with pebble to cobble gravel and silts. The glacial deposits were formed by glacial streams and can be as much as 80-feet thick in areas.

In August 2009, the NJDEP, BEMSA continuously split spooned sampled overburden at the subject site at ten (10) boring locations. (Attachment I) Underlying site lithology consisted of red silty sands with some clay siltstone fragments in the top 12 feet, this graded into coarse red sands with some siltstone fragments. Refusal was encountered at a variety of locations throughout the site. Refusal ranged from 8 feet bgs to 23.5 feet bgs due to either shallow slabs of concrete or bedrock. The NJDEP did not encounter a consistent clay or shallow ground water prior to refusal across the site.

The underlying bedrock is a reddish-brown Triassic-aged Brunswick shale. The Brunswick shale is part of the Lower Jurassic and Upper Triassic portions of the Newark Group. These non-marine reddish-brown and grayish-red siltstone and shales generally trend toward the northeast and dip to the northwest. Several igneous bodies in the form of basalt flows are intercalated within the Newark Group and form the Watchung Mountains, located north of the site. Ground water is present at varying amounts in consolidated and unconsolidated deposits in the region. The Brunswick Formation is utilized as a main aquifer for public drinking water in Middlesex and Union Counties. (Attachment J)

Depth to water table: approximately 40 feet below ground surface
Depth to aquifer of concern: 40 feet
Depth from lowest point of waste disposal/storage to highest seasonal level of the saturated zone of the aquifer of concern: 30 feet
Thickness and permeability of the least permeable layer between the ground surface and the aquifer of concern: Silty sand lenses vary from 0.5 to 2 feet thick, approximate permeability 6 ft/day
Thickness of aquifer: Approximately 45 to 65 feet thick in Plainfield area
Direction of ground water flow: Northeast
Net precipitation value: 6
Karst: No
Wellhead Protection Area within 4 miles of the site: Yes (Map 11 and Attachment L)
Does a waste source overlie a Wellhead Protection Area: Yes

B. MONITORING WELL INFORMATION

Briefly discuss why the monitoring wells were installed. Tabulate and discuss contaminants identified in the monitoring wells. Include Well No., sampling date, sampling agency or company, contaminant levels and remediation standards. For each sampling event, list the name, address and certification number of the lab, which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications.

No monitoring wells were installed on the subject property.

C. OTHER GROUND WATER SAMPLING

Discuss any other ground water sampling that has occurred. Tabulate and discuss contaminants identified in the samples. Include sampling date, sampling agency or company, contaminant levels and remediation standards. For each sampling event, list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications. Tabulate contaminants identified in each well. Include well number, contaminant levels and corresponding NJDEP Ground Water Quality Standard (GWQS).

A production well is located on the property; however, construction logs of the well are not on file within the NJDEP. The production well is located on the Finne Company property. The property owner's son, Mr. Mike Finne, stated to the NJDEP, DWR in 1986 that he removed the pump from the production well in 1981, and the well had been covered with concrete. (Attachment K) Supplemental field investigations conducted by the NJDEP, DWR discovered the exact location of the well. On May 28, 1986, the abandoned production well was sampled by the NJDEP, DWR. It was noted by an NJDEP, DWR Investigation Memorandum, dated May 28, 1986, the well was 8-inches in diameter and 51-feet deep. (Attachment K) Water was encountered at 36 feet below the surface. It was noted by NJDEP, DWR that the well might have been obstructed; therefore, a representative water sample might not have been collected from the well. The production well ground water sample collected on May 28, 1986 was submitted to the NJ Department of Health

Laboratory for analysis. Laboratory analytical results identified chloroform at 1.0 parts per billion (ppb), PCE at 1.3 ppb and TCE at 1 ppb. The NJDEP Ground Water Quality Standard (GWQS) for PCE and TCE are 1 ppb.

In 1986, NJDEP, DWR collected water within a drainage pit located on the Samoset property. The exact location of the drainage pit was not identified by DWR. DWR representatives noted that the "liquid" was sampled from the drainage pit; therefore, the water sample collected was not collected from the ground water table. Laboratory analytical results of water collected from the drainage pit identified PCE at 7,017 ppb and trans-1,2-DCE at 0.94 ppb. The NJDEP GWQS for PCE is 1 ppb and trans-1,2-DCE is 100 ppb; however, the water analyzed from the drainage pit was collected from liquid within the pit and not from the ground water table underneath the site.

Discuss contaminants identified in the monitoring wells above background and the ground water quality standards and provide the rationale for site attribution. State whether Level 1 or Level 2 contamination is present.

A source of the PCE and TCE ground water contamination detected in the production well was never named by the NJDEP, DWR. To determine the source of the PCE and TCE impacted ground water detected on the former Samoset Laundry property, the NJDEP would need to install and sample monitor wells on and off site.

D. POTABLE WELL INFORMATION

Distance to nearest potable well: 1,700-feet northeast
Depth of nearest potable well: 350 feet below ground surface

Identify all public supply wells within 4 miles of the site and tabulate for each aquifer the population utilizing that aquifer for drinking purposes. Include only those populations which utilize wells that have a potential to be impacted, not wells which are actually impacted. Do not list private potable wells individually in this table, but include populations served by these private wells.

See Map 8 and Attachment L: 4-Mile Water Withdrawal Apportionment Table

The Elizabethtown Water Company Netherwood Wellfield consists of thirteen (13) drinking water wells located between 0.3 to 0.75 miles northeast of the subject property. The closest public supply well to the former Samoset facility is located approximately 0.3 miles northeast of the subject property and is called Netherwood Well #1. The NJ American Water company constructed a packed tower aeration unit at the Netherwood Treatment Plant Facility for the removal of chlorinated compounds from the water supply. The Netherwood Treatment Plant currently treats ground water withdrawn from all thirteen (13) wells within the Netherwood Wellfield for VOC contamination.

Raw water sample results are kept on record at the Elizabethtown Water Company - Netherwood Water Treatment Plant. According to the Elizabethtown Water Company sampling files,

chlorinated compounds such as 1,1,1-trichloroethane (TCA), TCE and PCE have been detected in Wells #1 through #11 since July 1982. Individual raw water well samples collected from July 22, 1982 to December 24, 1983 identified ranges in TCE, PCE and 1,1,1-TCA concentrations. (Attachment N) The highest historical concentration of chlorinated compounds reported in the wells was 330 ppb of TCE in Well #9 to 35 ppb of PCE in Well #6. The closest well to the former Samoset Facility is Well #1. Historical raw water sampling results from Well #1 reported an average concentration of TCE at 15 ppb, 1,1,1-TCA at 4 ppb and PCE at 20 ppb. Currently, the Elizabethtown Water Company samples the Netherwood Treatment Plant influent and effluent water supply on a monthly basis. The Netherwood Treatment Plant influent and effluent sampling data for the time frame from January until March 2008 was received by the Elizabethtown Water Company. (Attachment O) Influent sampling data reported PCE concentrations ranging from 2.8 ppb in March 2008 to 2.1 ppb in April 2008. Influent sampling data reported TCE concentrations ranging from 23.6 ppb in March 2008 to 15.8 ppb in February 2008. Effluent ground water sampling results did not detect concentrations PCE or TCE above the laboratory MDLs since water was "treated" prior to sampling. The NJDEP Maximum Contaminant Limit (MCL) for PCE and TCE is 1 ppb.

The Wellhead Protection Area (WHPA) is "the area from which a well draws its water within a specified time frame." A public supply well or a group of wells (i.e., wellfield) draw water from a certain aquifer. When a well or wellfield pumps for a long period of time at a certain rate, then the greater the distance from which water will flow to the pumping well through the aquifer (i.e., zone of influence). The time it takes for a particle or possible contaminant to flow through the aquifer is directly related to the pumping rate and the aquifer characteristics. Each WHPA is divided into three tiers (tier 1 is 0-2 years, tier 2 is 2-5 years, or tier 3 is 5-12 years) that relate to the risk of contamination to the well, which in turn can identify a range of potential sources that threaten the well or wellfield. The subject property is located within the WHPA for the entire Netherwood Wellfield. (Map 8 and Attachment M)

State whether ground water is blended with surface water, ground water or both prior to distribution:

The American Water Company: Elizabethtown Division withdraw ground water from a total of 129 public wells and seven (7) surface water intakes which are blended prior to distribution. The Middlesex Water Company also serves this area and blends ground water from 31 wells with surface water from a surface water intake prior to distribution.

Discuss private potable well use within 4 miles of the site. Include depth, formation and distance, if available.

There is no private potable water use within 4 miles of the site, there is only municipal water use within the region.

Discuss the site's source of potable water.

The City of Plainfield's Health records for the facility do not indicate if the former Samoset facility ever utilized private potable water. According, to site records the facility has always been connected to the City of Plainfield's public water system. The former Samoset facility did utilize a production well at the site for water supply but it is unknown if that well was also utilized for drinking water.

Discuss information concerning the population utilizing wells that are known to be contaminated with hazardous substances which are attributable to the site. Also include any other evidence of contaminated drinking water or wells closed due to contamination. State whether Level 1 or Level 2 contamination is present.

The contaminants PCE, TCE and trans-1,2-DCE have been identified in onsite soils, within an aqueous drainage pit sample and within water of a onsite production well. Based on these results, the site may be a source of the PCE and TCE discovered in the Elizabethtown Netherwood Wellfield.

Identify any resource uses of ground water within 4 miles of the site (i.e., commercial livestock watering, ingredient in commercial food preparation, supply for commercial aquaculture, supply for major, or designated water recreation area, excluding drinking water use, irrigation of commercial food or commercial forage crops, unusable).

Ground water within 4-miles of the site is used as a drinking water supply for residents and industries in the Plainfield area and for the City of Plainfield's emergency water use.

E. LIKELIHOOD OF RELEASE

Discuss the likelihood of a release of contaminants to ground water, including any other information concerning the ground water contamination route. Identify contaminants detected or suspected and provide a rationale for attributing them to the site.

Ground water contamination was discovered at the site by the NJDEP, DWR in 1986. The ground water laboratory analytical results from a production well onsite revealed PCE at 1.3 ppb and TCE at 1 ppb, equal to or above the NJDEP GWQS of 1 ppb for PCE and TCE. The production well was noted to be possibly obstructed; therefore, a representative sample may have not been collected. It is unknown if these contaminants represent of a possible release from the subject site or are attributable to regional ground water contamination. Due to complex shallow aquifer flow regimes, the limited samples collected from the aquifer of interest, and TCE concentrations detected in ground water samples on and off-site. BEMSA recommend an Expanded Site Investigation (ESI) be performed and the installation of shallow ground water wells to assess ground water flow in the area and assess ground water quality associated with the subject property and surrounding properties.

PART VI: SURFACE WATER ROUTE

A. SURFACE WATER

Does a migration pathway to surface water exist? No
Flood plain: within a 100-year flood plain (Map 10)
Size of drainage area for sources at the site in acres: approximately 2-acres
2-year, 24-hour rainfall in inches: 3.0 inches average rainfall
Does contaminated ground water discharge to surface water? No
Identify known or potentially contaminated surface water bodies. Follow the pathway of the surface water and indicate all adjoining bodies of water along a route of 15 stream miles.

Surface Water Body	Distance from Site (miles)	Flow (cfs)	Usage(s)
Green Brook	0.5-miles	2.1	FW2-NT
Raritan River	9-miles	297	FW2-NT

NOTES: FW2-NT is Freshwater used for recreational fishery, non-trout.

Identify drinking water intakes and fisheries within 15 miles downstream (or upstream in tidal areas) of the site. For each intake or fishery identify the distance from the point of surface water entry, the name of the fishery and/or supplier and population served.

Green Brook is a freshwater recreational fishery located approximately 0.5-miles southwest of the subject property. Four (4) surface water bodies, Stony Brook, Bonygut Brook, Bound Brook and Ambrose Brook, discharge into Green Brook along the surface water pathway. Green Brook drains into the Raritan River approximately 9-miles from the assumed point of entry. The Raritan River is a freshwater recreational fishery. No drinking water intakes were identified within 15-miles downstream of the subject property along the surface water pathway.

Discuss surface water and/or sediment sampling conducted in relation to the site. Include surface water body, sampling date, sampling agency or company. State whether Level 1 or Level 2 contamination is present for surface water. State whether Level 2 contamination of sediments is present. For each sampling event, list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications. Discuss visual observations if analytical data are not available (include date of observation).

No surface water or sediment sampling has been conducted in relation to the site.

Determine if a contaminant on site displays bioaccumulative properties. Identify all bioaccumulative substances that may impact the food chain.

No bioaccumulation has been observed nor is one suspected.

Determine if surface water is used for irrigation of commercial food or commercial forage crops, watering of commercial livestock, commercial food preparation or recreation.

Surface water is used for recreational fishing in areas along the Green Brook and Raritan River, no other commercial uses are known at this time.

B. SENSITIVE ENVIRONMENTS

Identify all sensitive environments, including wetlands, along the 15 stream-mile pathway from the site:

Environment Type	Surface Water Body	Flow (cfs)	Distance from Site	Wetland Frontage
Wetlands	Green Brook	2.1	0.5-mile	15-miles
Wetlands	Raritan River	297	9-miles	10-miles

C. LIKELIHOOD OF RELEASE

Discuss the likelihood of a release of contaminant(s) to surface water, include any additional information concerning the surface water route. Identify contaminants detected and provide a rationale for attributing them to the site. Identify any intakes, fisheries and sensitive environments, listed above, that are or may be actually contaminated by hazardous substances attributed to an observed release from the site.

Shallow ground water has been impacted with PCE and TCE at concentrations above or equal to the NJDEP GWQS of 1 ppb on the subject property. Pumping of the underlying aquifer by public supply wells has influenced shallow ground water flow in the region. Shallow ground water flow is suspected to be toward the northeast, in the direction of Netherwood Wellfield pumping center. The closest surface water body downstream of the subject property is located 0.5-miles toward the southwest. A release to surface water from the subject site is not expected. No sampling of surface water has been conducted thus an observed release to surface water has not been documented.

PART VII: AIR ROUTE

A. POPULATION AND SENSITIVE ENVIRONMENTS

Identify populations residing within 4 miles of the site. (Map 9)

Distance (miles)	Population
on site	0

Distance (miles)	Population
> 0 - 1/4	1,395
> 1/4 - 1/2	4,545
> 1/2 - 1	17,241
> 1 - 2	45,027
> 2 - 3	50,001
> 3 - 4	61,309

Identify sensitive environments and wetland acreage within 4 miles of the site. (Map 7)

Distance	Type of environment	Wetland acreage
0 - 1/4	Wetlands	0
> 1/4 - 1/2	Wetlands	2
> 1/2 - 1	Wetlands	34
> 1 - 2	Wetlands	539
> 2 - 3	Wetlands	918
> 3 - 4	Wetlands	1,721

B. LIKELIHOOD OF RELEASE

Describe the likelihood of release of hazardous substances to air. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For an observed release, discuss the supporting analytical evidence and its significance relative to background.

A release of hazardous substances to air is not suspected and has been not been documented on the subject property.

If a release to air is observed or suspected, determine the number of people that reside within the area of air contamination.

A release of hazardous substances to air is not suspected and has been not been documented on the subject property.

If a release to air is observed, identify any sensitive environments that are located within the area of air contamination.

A release of hazardous substances to air is not suspected and has been not been documented on an adjacent property from the subject property.

PART VIII: REMOVAL ACTION AND/OR IEC CONDITION

Discuss conditions which constitute an Immediate Environmental Concern (IEC) or warrant EPA Removal Action consideration (improper storage of incompatible/reactive materials, leaking or unsound containers, inadequate site security, subsurface gas threat).

No IEC exists on the subject property at the time of this report.

PART IX: CONCLUSIONS AND RECOMMENDATIONS

Samoset Laundry started dry cleaning operations in 1927 and continued operating under several different owners until the Fall of 1983. The Plainfield Bureau of Fire Prevention records identified that the facility held permits for the following: 2,500-gallon mineral spirits UST, 2,000-gallon clean solvent UST, a 550-gallon naphthalene AST, 550-gallon stoddard solvent AST and 100-gallon perchloroethelene AST. The NJDEP, DWR identified the presence of a 10,000-gallon fuel oil UST, a 2,000-gallon gasoline UST and 550-gallon gasoline UST on the property. Soil around the USTs were sampled in 1991 and laboratory analytical results of soils collected around the USTs identified aromatic and chlorinated hydrocarbons compounds, including TCE, benzene and xylene. Soil analytical result did not report individual exceedances of the above-noted compounds. The current owner of the property, Mr. Phil Suydam, stated that no USTs or evidence of USTs was discovered during demolition activities for the former Samoset building. Demolition activities included digging test pits around the former building to try and remove the building's concrete footers.

Between 1985 and 1986, the NJDEP, DWR collected soil samples from identified AOCs on the former dry cleaning property. Soil laboratory analytical results identified PCE at 28 ppm, TCE at 4.02 ppm and 1,2-DCE at 5.675 ppm. Soil samples collected by NJDEP, BEMSA in August 2009 indicated the highest contaminant concentration of PCE was 1.1 ppm collected at 7 to 8 feet bgs in soil boring B-5. Soil boring B-5 was installed within the central portion of the former dry cleaners building located subject property. The NJDEP Residential SRS Criteria for PCE is 2 ppm, TCE is 7 ppm and 1,2-DCE is 230 ppm.

In 1986, NJDEP, DWR collected water within a production well and a drainage pit on the property. Laboratory analytical results of water collected from the drainage pit identified PCE at 7,017 ppb and trans-1,2-DCE at 0.94 ppb. Ground water laboratory analytical results collected from the production well identified PCE at 1.3 ppb and TCE at 1.0 ppb. The NJDEP GWQS for PCE and TCE are 1 ppb. The NJDEP, DWR water samples collected from both the drainage pit and production well may not have been representative of ground water from under the site since the

drainage pit water was noted as a "liquid" sample and the production well may have been obstructed during sampling activities.

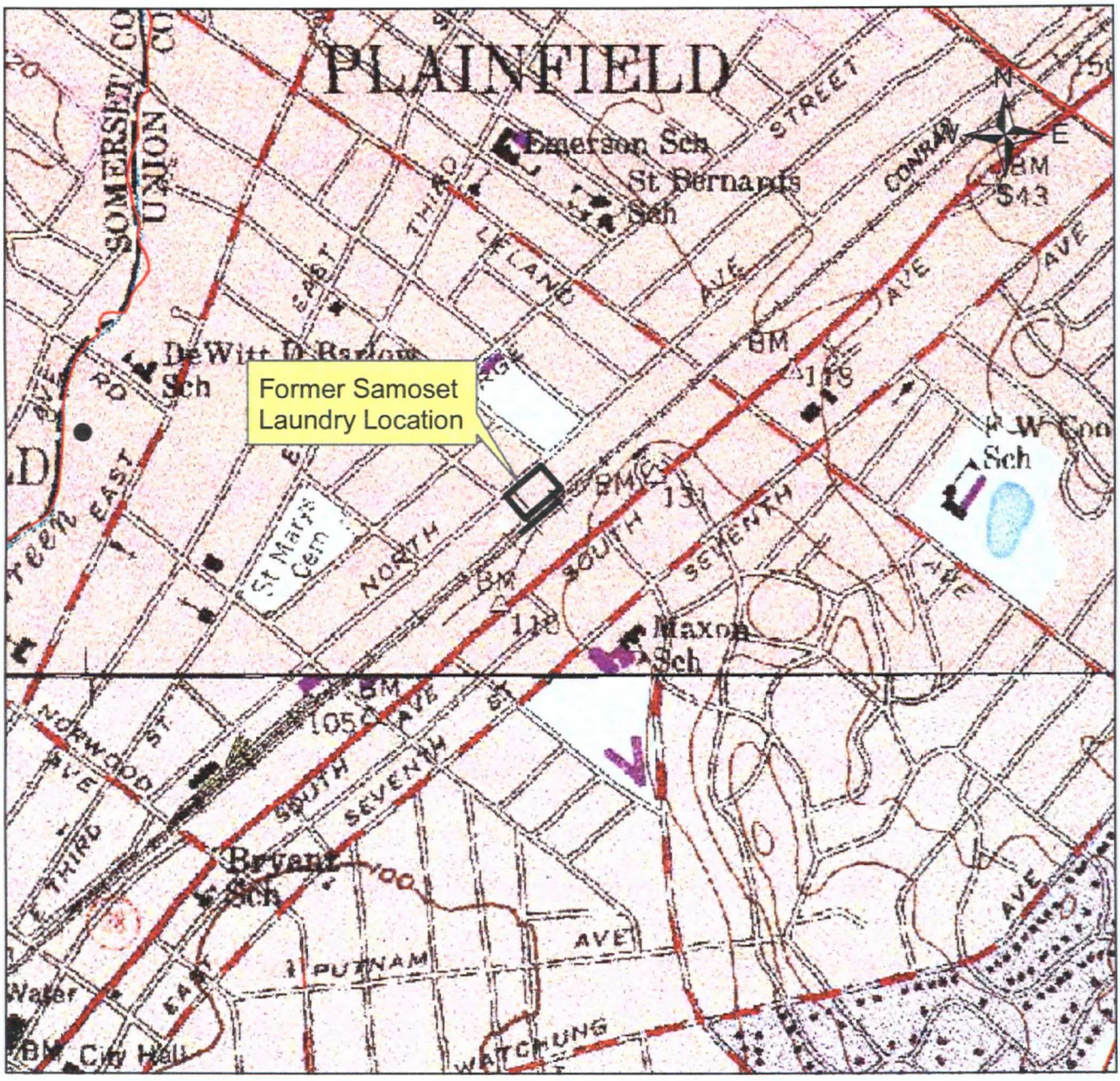
Historical soil and water sampling conducted at the site have identified PCE and TCE contamination that can be attributed to the former operations of a dry cleaner at the subject property. The detected concentrations of PCE and TCE in water at the production well and within soil during the 2009 soil sampling on the property can not be attributed to impacting ground water regionally or to impacting the Netherwood Wellfield. An ESI is recommended to establish if the subject property is a source of the ground water contamination and the contamination at the Netherwood Wellfield.

The HRS score for this site is above 28.5; therefore, the site does qualify for further action under CERCLA. An Expanded Site Investigation is recommended that will include the installation of monitoring wells to evaluate the ground water.

Submitted by: Kimberly L.Ward
Title: Senior Geologist
NJDEP, Division of Remediation Support,
Bureau of Environmental Measurements and Site Assessment
Date: 9/30/2009

PART X: POTENTIALLY RESPONSIBLE PARTIES

NAME	OWNER/OPERATOR/ KNOWN DISCHARGER	CURRENT ADDRESS
Former Samoset Laundry Facility	Owner & Operator	Out of business, unknown
902 North Avenue Inc.	Owner	Out of business, unknown
First Avenue Cleaners Corporation	Operator	Out of business, unknown
Phillip and Janice Walker of Walker Roofing Company	Owner & Operator	Out of business, unknown



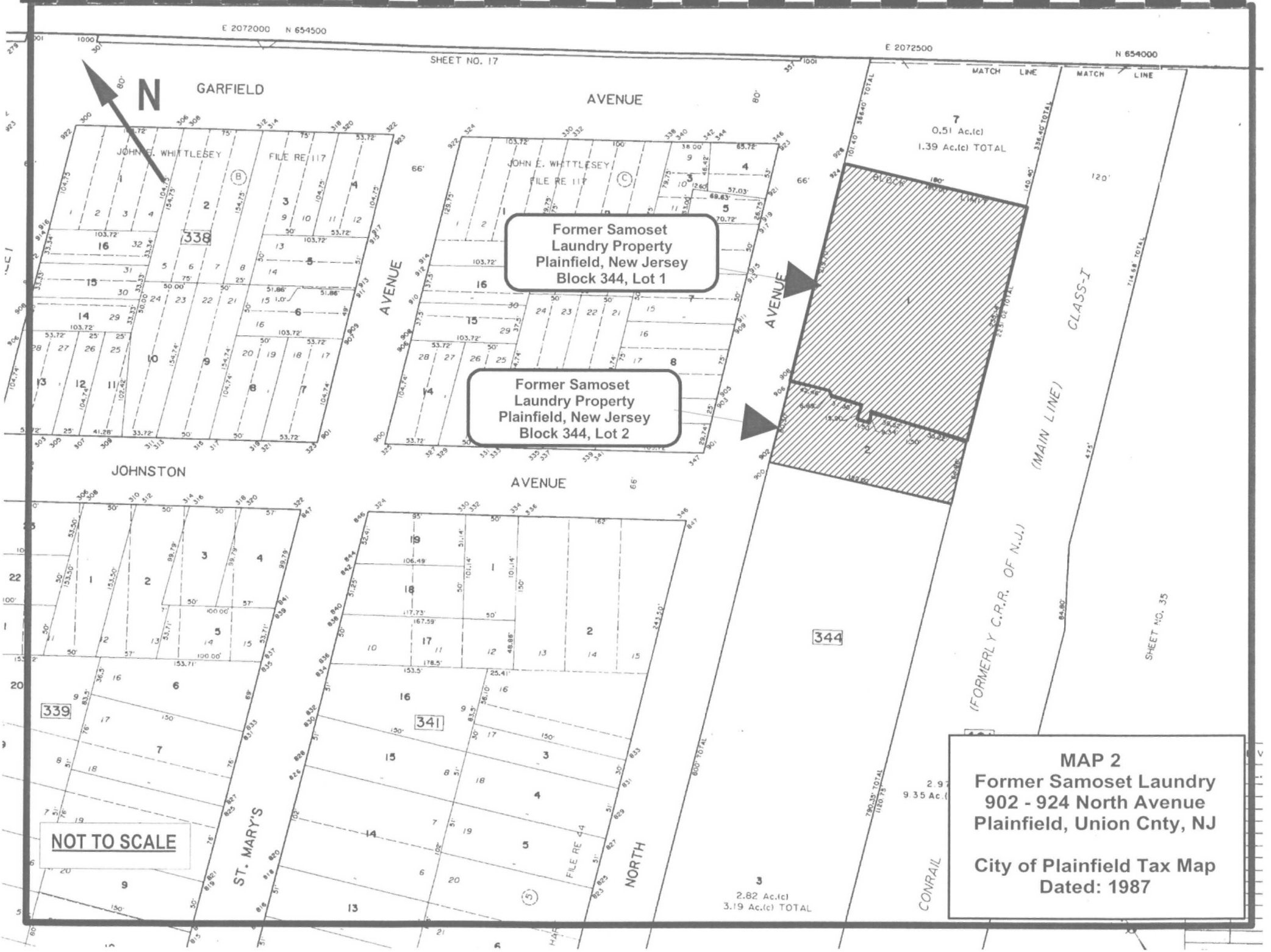
USGS 7.5-minute quadrangle, Chatham

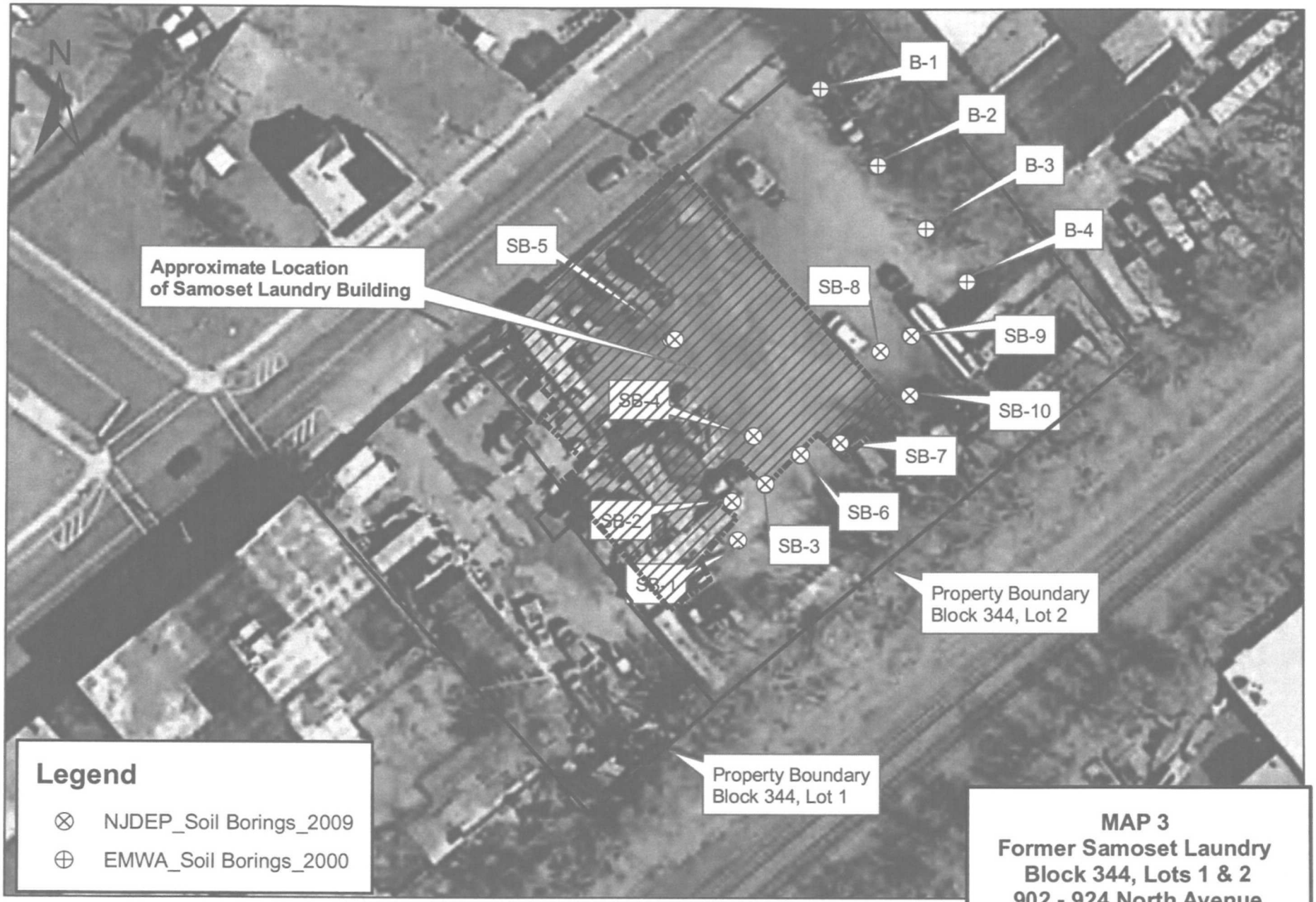
N
W E
S

MAP 1
Samoset Laundry Facility
902 - 924 North Avenue
Plainfield, Union Cnty, NJ

Lat: 40.628367 Long: -74.406493

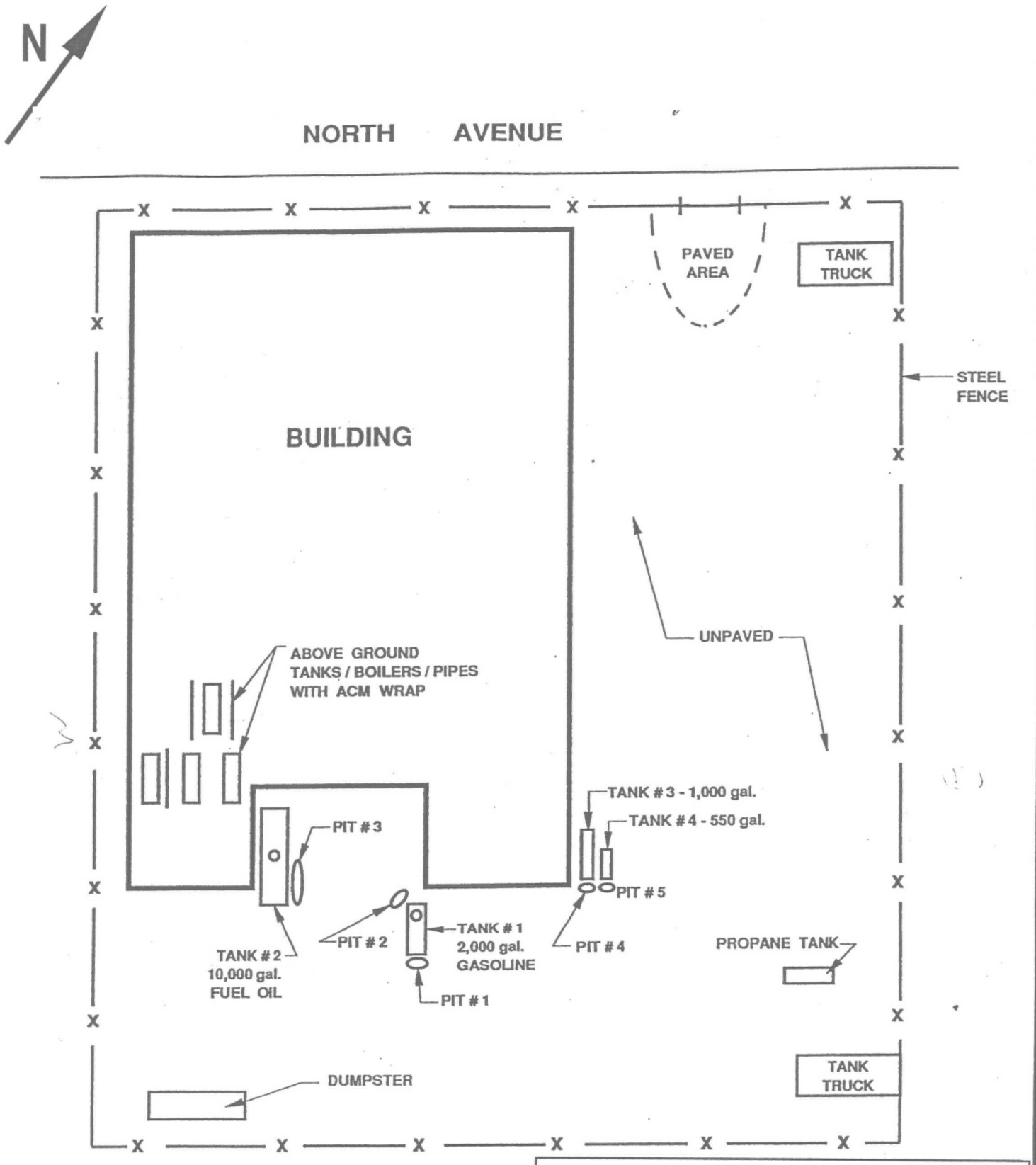
USGS Topographic Map
Chatham, N.J. Quadrangle
Dated: 1981


E 2072000 N 654500
SHEET NO. 17
E 2072500
N 654000
MATCH LINE
MATCH LINE
N
GARFIELD
AVENUE
JOHN E. WHITTLESEY
FILE RE 117
338
Former Samoset
Laundry Property
Plainfield, New Jersey
Block 344, Lot 1
Former Samoset
Laundry Property
Plainfield, New Jersey
Block 344, Lot 2
7
0.51 Ac.(c)
1.39 Ac.(c) TOTAL
BLOCK LINE
1
2
344
CLASS-I
(MAIN LINE)
(FORMERLY C.R.R. OF N.J.)
JOHNSTON
AVENUE
339
341
ST. MARY'S
NORTH
FILE RE 44
3
2.82 Ac.(c)
3.19 Ac.(c) TOTAL
CONRAIL
SHEET NO. 35
NOT TO SCALE
MAP 2
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union Cnty, NJ
City of Plainfield Tax Map
Dated: 1987



MAP 3
Former Samoset Laundry
Block 344, Lots 1 & 2
902 - 924 North Avenue
Plainfield, Union Cnty, NJ

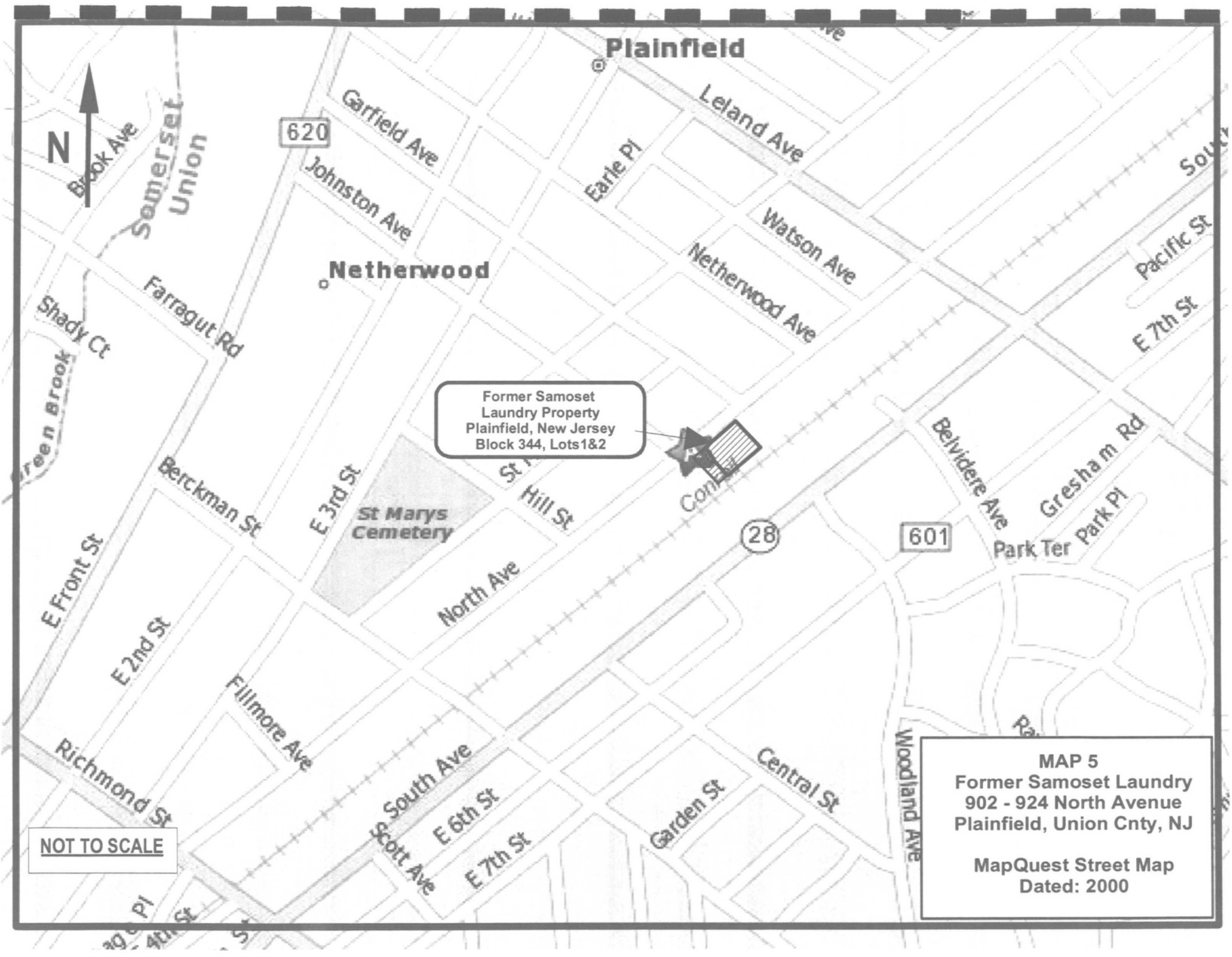
Soil Boring Location Map
Dated: August 2009

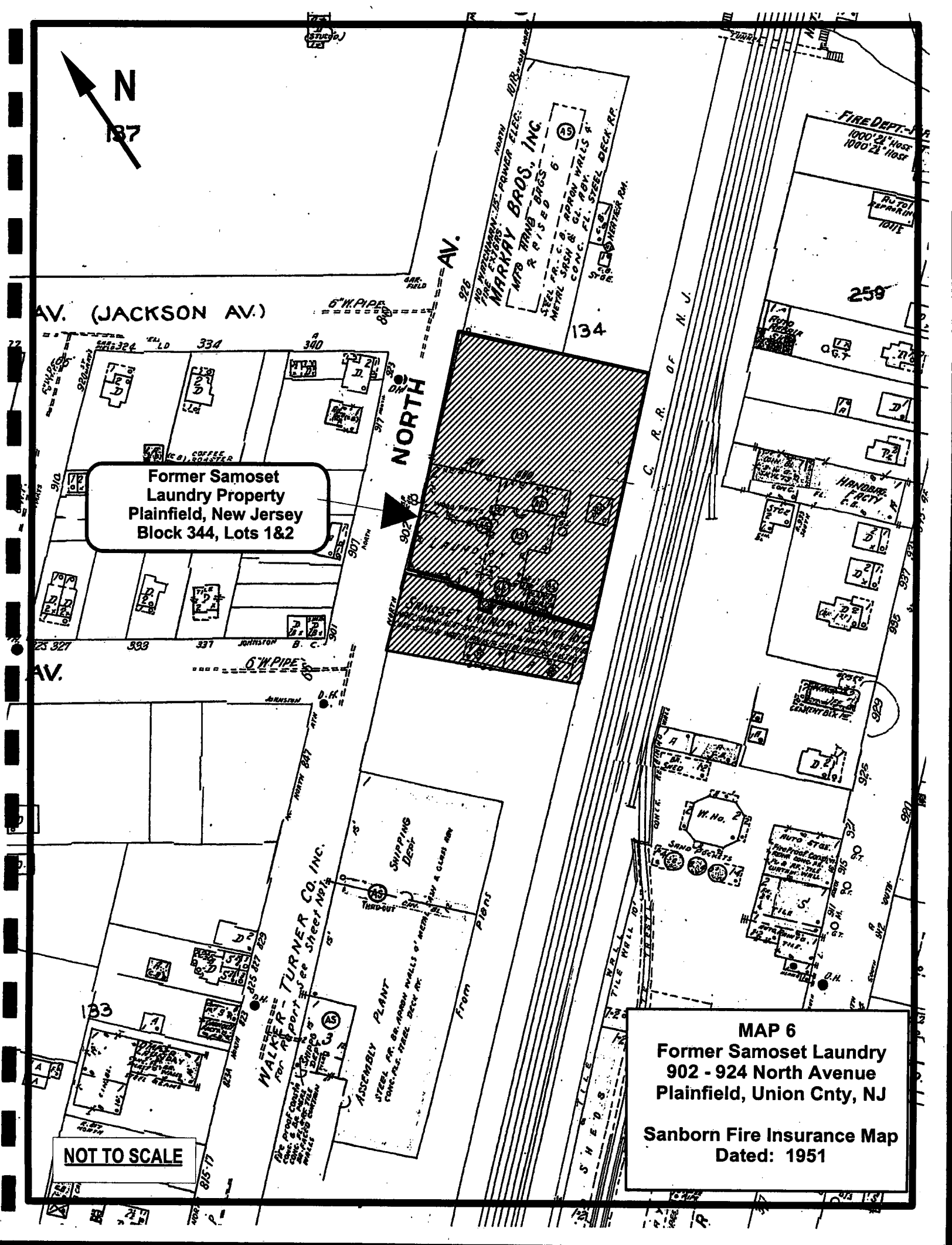


MAP 4
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union Cnty, NJ

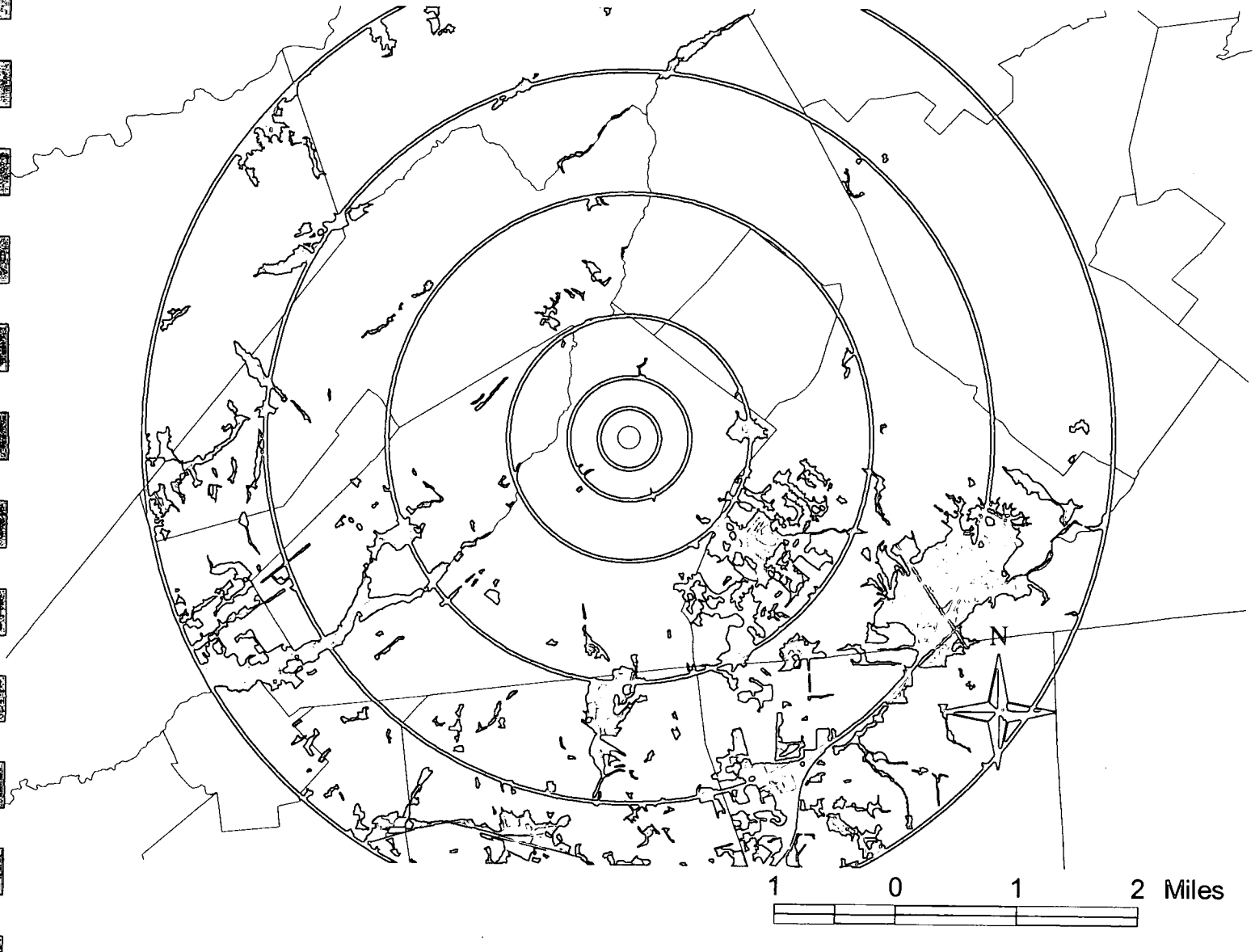
Environmental Waste Managament Assoc.
Area of Concern Map
Dated: February 22, 1991

NOT TO SCALE


Plainfield
Netherwood
N
Somerset Union
620
Garfield Ave
Johnston Ave
Leland Ave
Earle Pl
Watson Ave
Netherwood Ave
Pacific St
E 7th St
Brook Ave
Shady Ct
Farragut Rd
Berckman St
E 3rd St
St Marys Cemetery
Hill St
North Ave
E Front St
E 2nd St
Fillmore Ave
Richmond St
South Ave
Scott Ave
E 6th St
E 7th St
Garden St
Central St
Woodland Ave
Belvidere Ave
Gresham Rd
Park Ter
Park Pl
28
601
Former Samoset Laundry Property
Plainfield, New Jersey
Block 344, Lots1&2
NOT TO SCALE
MAP 5
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union Cnty, NJ
MapQuest Street Map
Dated: 2000


N
137
AV. (JACKSON AV.)
NORTH AV.
6" W. PIPE
MARKAY BROS., INC.
MFR TRUNK BAGS
134
259
C. R. R. OF N. J.
Former Samoset
Laundry Property
Plainfield, New Jersey
Block 344, Lots 1&2
WALKER-TURNER CO. INC.
ASSEMBLY PLANT
SHIPPING DEPT.
183
NOT TO SCALE
MAP 6
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union Cnty, NJ
Sanborn Fire Insurance Map
Dated: 1951

Map 7 of Wetlands Acres* Rings ,
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union County, New Jersey
Lat: 40° 37' 42.00" , Long: -74° 24' 20.00"



Ring	1	(0.00- 0.25)	has Wetlands Acres:	0
Ring	2	(0.25- 0.50)	has Wetlands Acres:	2
Ring	3	(0.50- 1.00)	has Wetlands Acres:	34
Ring	4	(1.00- 2.00)	has Wetlands Acres:	539
Ring	5	(2.00- 3.00)	has Wetlands Acres:	918
Ring	6	(3.00- 4.00)	has Wetlands Acres:	1721

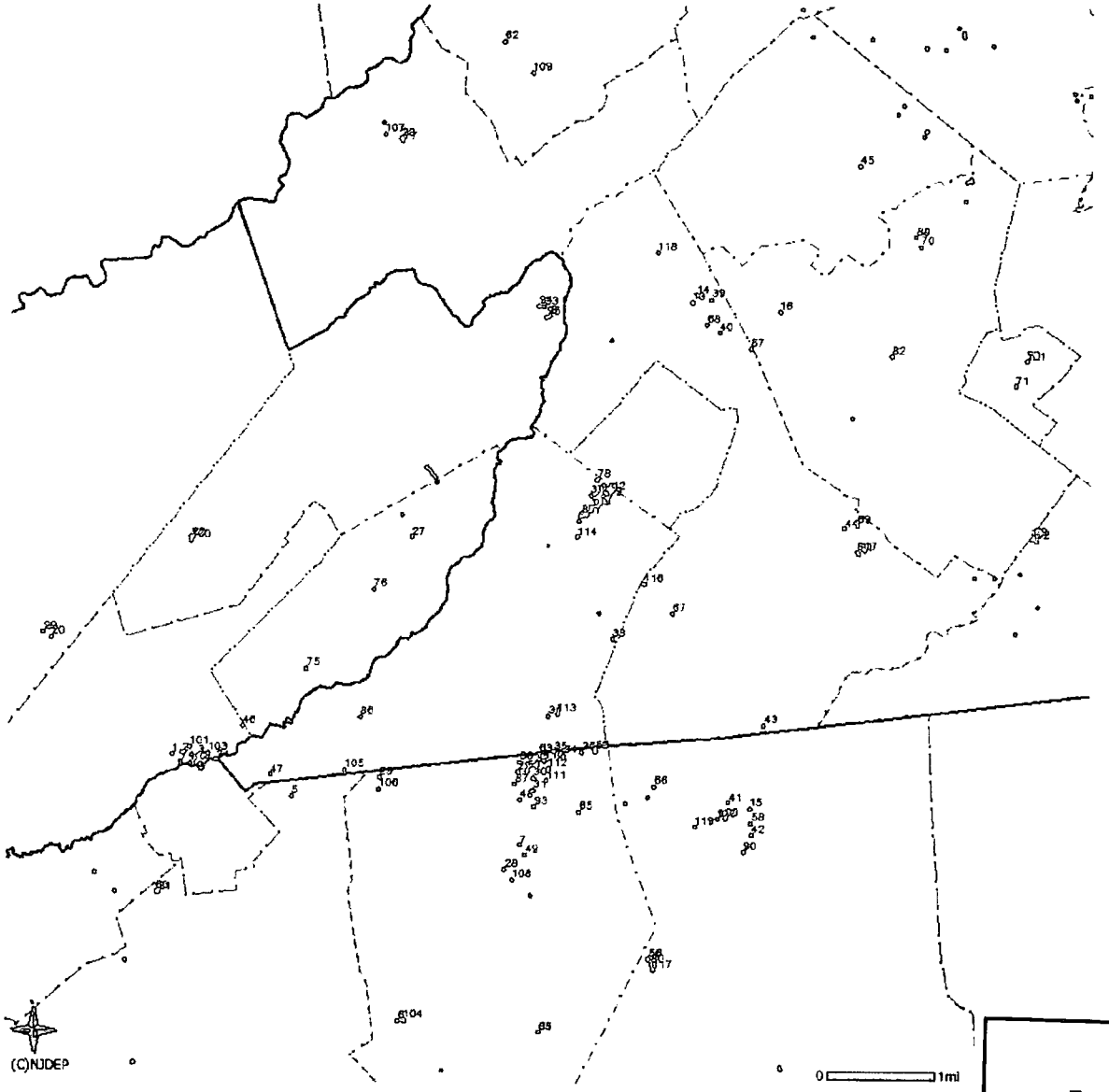
*Based on 1986 Land Use/Land Cover Data

100,000 GPD WATER WITHDRAWAL POINTS WITHIN 5 Miles OF :
X : 518338
Y : 653812

SCALE : 1 : 63,360

PLOT PRODUCED BY :
NJDEP
WATER SUPPLY
BUREAU OF WATER ALLOCATION
P.O. Box 426
TRENTON, NJ 08625
DATE : 4/8/2009

SUBJECT TO REVISION



MAP 8
Former Samoset Laundry
902-924 North Avenue
Plainfield, Union Cnty, NJ

Computer Generated Water Withdrawal Points Map
Date: December 3, 2008

Last refresh: 4/8/2009 07:10:26 PM

Withdrawal Points Tabular Data (SA)

Sequence Number	PI ID Number (Preferred NJEMS ID)	PI Name	SI Description	Distance from X/Y Origin (mi.)	Dep to Top of Open Interval + Units	Dep To Btm of Open Interval + Units	Z (Elevation)	Geologic Unit	Hydrogeologic Unit	Rated Pump Capacity + Units Code	BRDGBW
9	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #1	0.36			120	4000 JTrp Passaic Formation	ba Brunswick aquifer	225gm	
89	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #2	0.41			120	4000 JTrp Passaic Formation	ba Brunswick aquifer	225gm	
51	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #3	0.45			123	4000 JTrp Passaic Formation	ba Brunswick aquifer	450gm	
10	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #4	0.52			124	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
115	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #5	0.53			125	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
11	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #6	0.58		350ft	132	4000 JTrp Passaic Formation	ba Brunswick aquifer		
37	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #10	0.61			130	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
55	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #7	0.63			136	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
54	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #12	0.64			134	4000 JTrp Passaic Formation	ba Brunswick aquifer	250gm	
96	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #11	0.69			135	4000 JTrp Passaic Formation	ba Brunswick aquifer	250gm	
79	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN	NETHERWOOD #8	0.71			138	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	

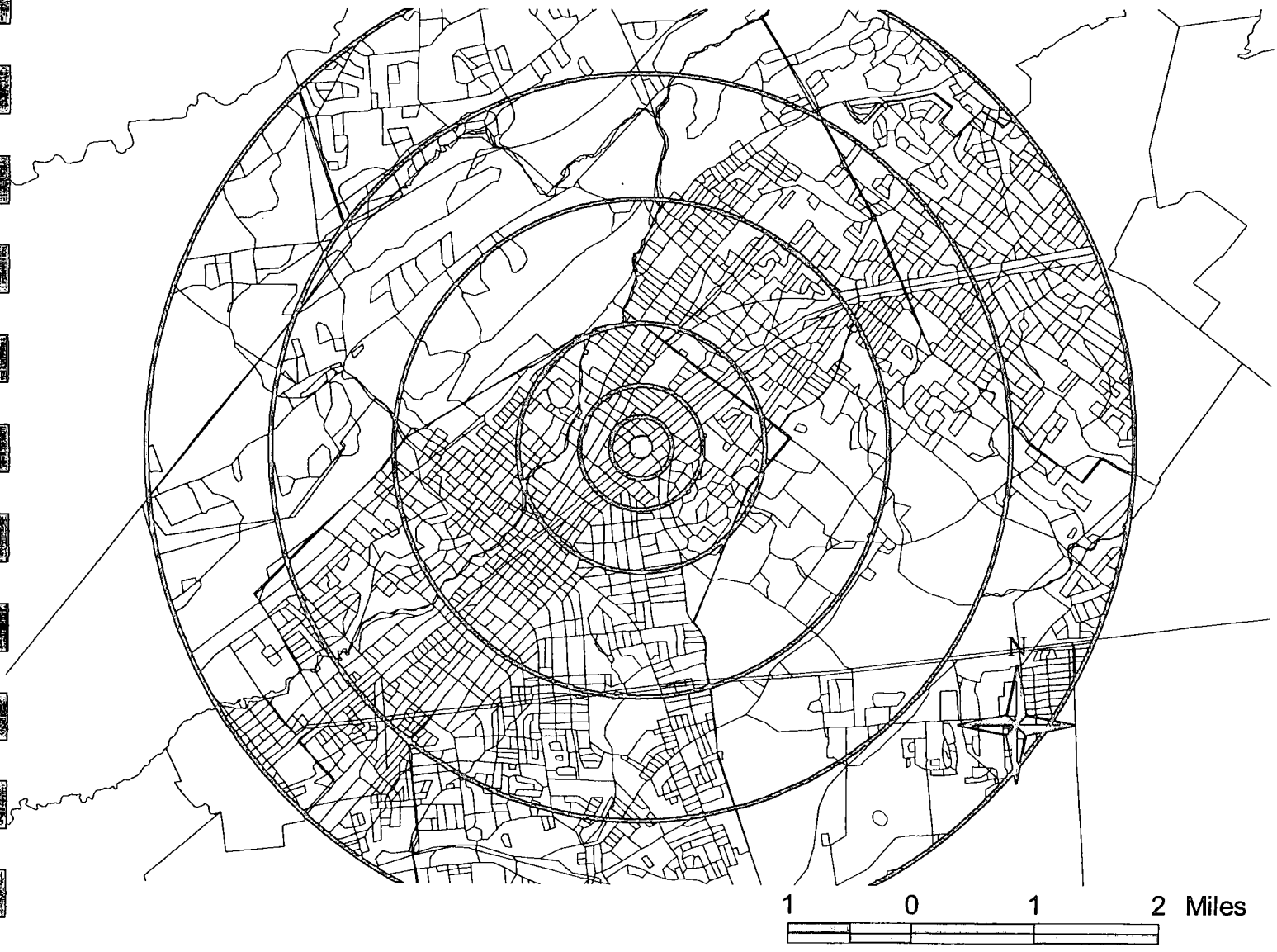
		WATER									
78	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GEORGE ST	0.76			136	4000 JTrp Passaic Formation	ba Brunswick aquifer	225gm	
12	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	NETHERWOOD #9	0.78			139	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
116	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	ABERDEEN RD	0.95			129	4000 JTrp Passaic Formation	ba Brunswick aquifer	390gm	
38	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	PROSPECT AVE	1.05			166	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
35	5293X	MIDDLESEX WATER CO	PARK AVE 18	1.91	53ft	74ft	79	400 Qsd Stratified drift	sg glacial sand and gravel	1400gm	
63	5293X	MIDDLESEX WATER CO	PARK AVE 21	1.94			77	400 Qsd Stratified drift	sg glacial sand and gravel	1000gm	
36	5293X	MIDDLESEX WATER CO	SPRAGUE AVE 1	1.94	81.33ft	100.5ft	94	400 Qsd Stratified drift	sg glacial sand and gravel	790gm	
53	5293X	MIDDLESEX WATER CO	SPRAGUE AVE 2	1.96	93.83ft	110ft	104	400 Qsd Stratified drift	sg glacial sand and gravel	790gm	
64	5293X	MIDDLESEX WATER CO	PARK AVE 20	1.96			82	400 Qsd Stratified drift	sg glacial sand and gravel	1450gm	
110	5293X	MIDDLESEX WATER CO	PARK AVE 23	2.00	58.5ft	73.5ft	77	400 Qsd Stratified drift	sg glacial sand and gravel	700gm	
88	5293X	MIDDLESEX WATER CO	PARK AVE 24	2.03			79	400 Qsd Stratified drift	sg glacial sand and gravel	450gm	
32	5293X	MIDDLESEX WATER CO	PARK AVE 30	2.04	97.83ft	500ft	76	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
112	5293X	MIDDLESEX WATER CO	PARK AVE 19	2.07	56.75ft	78ft	78	400 Qsd Stratified drift	sg glacial sand and gravel	1100gm	
50	5293X	MIDDLESEX WATER CO	PARK AVE 31	2.10	110.5ft	500ft	75	4000 JTrp Passaic Formation	ba Brunswick aquifer	425gm	
29	5293X	MIDDLESEX WATER CO	PARK AVE 32	2.12	87.75ft	501ft	77	4000 JTrp Passaic Formation	ba Brunswick aquifer	250gm	
30	5293X	MIDDLESEX WATER CO	PARK AVE 22	2.16			75	4000 JTrp Passaic Formation	ba Brunswick aquifer	320gm	
111	5293X	MIDDLESEX WATER CO	PARK AVE 29	2.18	108.67ft	500ft	77	4000 JTrp Passaic Formation	ba Brunswick aquifer	730gm	
87	5293X	MIDDLESEX WATER CO	PARK AVE 28	2.23	96.83ft	500ft	75	4000 JTrp Passaic Formation	ba Brunswick aquifer	250gm	
								4000 JTrp			

31	5293X	MIDDLESEX WATER CO	PARK AVE 27	2.28	104.75ft	501ft	74	Passaic Formation	ba Brunswick aquifer	350gm	
48	5293X	MIDDLESEX WATER CO	PARK AVE 26	2.37	67.25ft	495ft	72	4000 JTrp Passaic Formation	ba Brunswick aquifer	400gm	
93	5293X	MIDDLESEX WATER CO	PARK AVE 25	2.42			73	4000 JTrp Passaic Formation	ba Brunswick aquifer	850gm	
65	5293X	MIDDLESEX WATER CO	MAPLE AVE 1	2.49	97.75ft	351ft	80	4000 JTrp Passaic Formation	ba Brunswick aquifer	600gm	
75	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	BOARD OF EDUCATION	2.51			68	4000 JTrp Passaic Formation	ba Brunswick aquifer	400gm	
57	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	MORSE AVE WELL	2.61			195	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
13	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	JERUSALEM ROAD #2	2.61			214	4000 JTrp Passaic Formation	ba Brunswick aquifer	150gm	
25	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	8TH STREET	2.65			70	4000 JTrp Passaic Formation	ba Brunswick aquifer	240gm	
14	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	JERUSALEM ROAD #1	2.70			215	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
39	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	JERUSALEM ROAD #3	2.73			240	4000 JTrp Passaic Formation	ba Brunswick aquifer	150gm	
106	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	CLINTON AVE	2.75			69	4000 JTrp Passaic Formation	ba Brunswick aquifer	475gm	
7	5293X	MIDDLESEX WATER CO	SPRING LAKE 9	2.79	85.25ft	500ft	67	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
105	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	5TH STREET	2.80			62	4000 JTrp Passaic Formation	ba Brunswick aquifer	240gm	
49	5293X	MIDDLESEX WATER CO	SPRING LAKE 8	2.88	53.33ft	501ft	65	4000 JTrp Passaic Formation	ba Brunswick aquifer	650gm	
118	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GLENSIDE AVE WELL	2.90			207	4000 JTrp Passaic Formation	ba Brunswick aquifer	135gm	
								4000 JTrp			

41	5293X	MIDDLESEX WATER CO	TINGLEY NORTH 2	2.90			81	Passaic Formation	ba Brunswick aquifer	200gm	
119	5293X	MIDDLESEX WATER CO	TINGLEY SOUTH 5	2.94	40.17ft	532ft	78	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
97	5293X	MIDDLESEX WATER CO	TINGLEY NORTH 3	2.98			71	4000 JTrp Passaic Formation	ba Brunswick aquifer	450gm	
120	5293X	MIDDLESEX WATER CO	TINGLEY NORTH 4	2.98			71	4000 JTrp Passaic Formation	ba Brunswick aquifer	750gm	
98	5293X	MIDDLESEX WATER CO	TINGLEY NORTH 1	3.01	54ft	402ft	70	4000 JTrp Passaic Formation	ba Brunswick aquifer	567gm	
28	5293X	MIDDLESEX WATER CO	SPRING LAKE 5	3.03	50.92ft	500ft	63	4000 JTrp Passaic Formation	ba Brunswick aquifer	600gm	
16	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	PROSPECT ST WELL	3.05			200	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
15	5293X	MIDDLESEX WATER CO	TINGLEY SOUTH 6	3.07		540ft	75	4000 JTrp Passaic Formation	ba Brunswick aquifer	400gm	
108	5293X	MIDDLESEX WATER CO	SPRING LAKE 6	3.12	58ft	504ft	62	4000 JTrp Passaic Formation	ba Brunswick aquifer	500gm	
58	5293X	MIDDLESEX WATER CO	TINGLEY SOUTH 7	3.18	45ft	608ft	79	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
42	5293X	MIDDLESEX WATER CO	TINGLEY SOUTH 8	3.27	50ft	629ft	82	4000 JTrp Passaic Formation	ba Brunswick aquifer	500gm	
46	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	ROCK AVE-GREEN BROOK	3.28			61	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
5	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	ROCK AVE-PISCATAWAY	3.32			60	4000 JTrp Passaic Formation	ba Brunswick aquifer	150gm	
90	5293X	MIDDLESEX WATER CO	TINGLEY SOUTH 9	3.36	32.67ft	700ft	105	4000 JTrp Passaic Formation	ba Brunswick aquifer	300gm	
24	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 9	3.66			58	4000 JTrp Passaic Formation	ba Brunswick aquifer	500gm	
103	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 1	3.69			58	4000 JTrp Passaic Formation	ba Brunswick aquifer	310gm	
								3070 Trb			

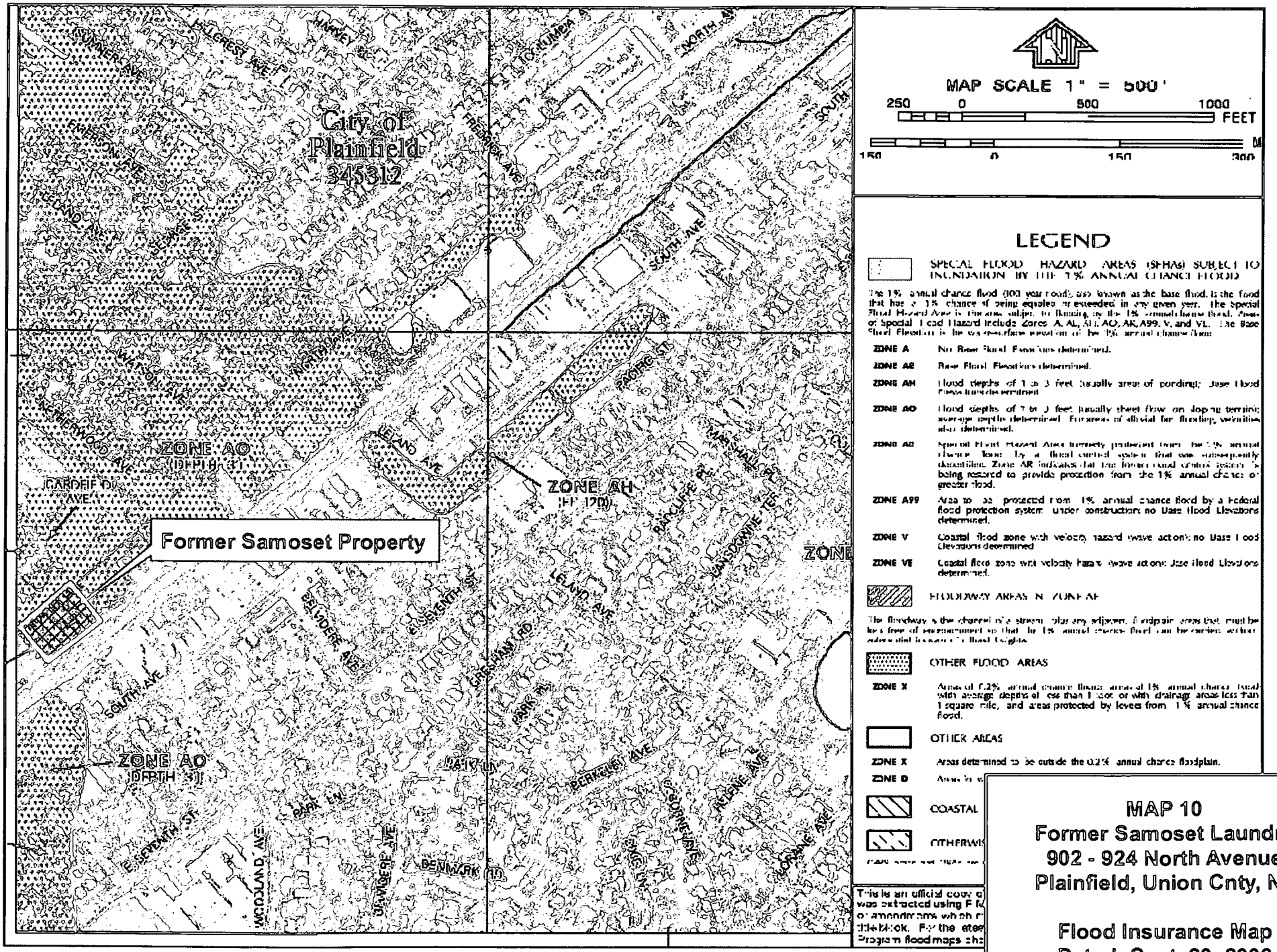
3	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 2	3.78			57	Brunswick Formation (superceded by Passaic, Feltville, Towaco, and Boonton Formations)	ba Brunswick aquifer	650gm	
101	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 3	3.81			57	4000 JTrp Passaic Formation	ba Brunswick aquifer	60gm	
4	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 4	3.82			57	4000 JTrp Passaic Formation	ba Brunswick aquifer	350gm	
23	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 8	3.82			56	4000 JTrp Passaic Formation	ba Brunswick aquifer	150gm	
102	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 5	3.88			55	4000 JTrp Passaic Formation	ba Brunswick aquifer	315gm	
2	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 7	3.90			56	4000 JTrp Passaic Formation	ba Brunswick aquifer	80gm	
74	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 6	3.95			55	4000 JTrp Passaic Formation	ba Brunswick aquifer	600gm	
1	5020X	ELIZABETHTOWN WATER DBA NJ AMERICAN WATER	GREEN BROOK NO. 11	3.99			55	4000 JTrp Passaic Formation	ba Brunswick aquifer	200gm	

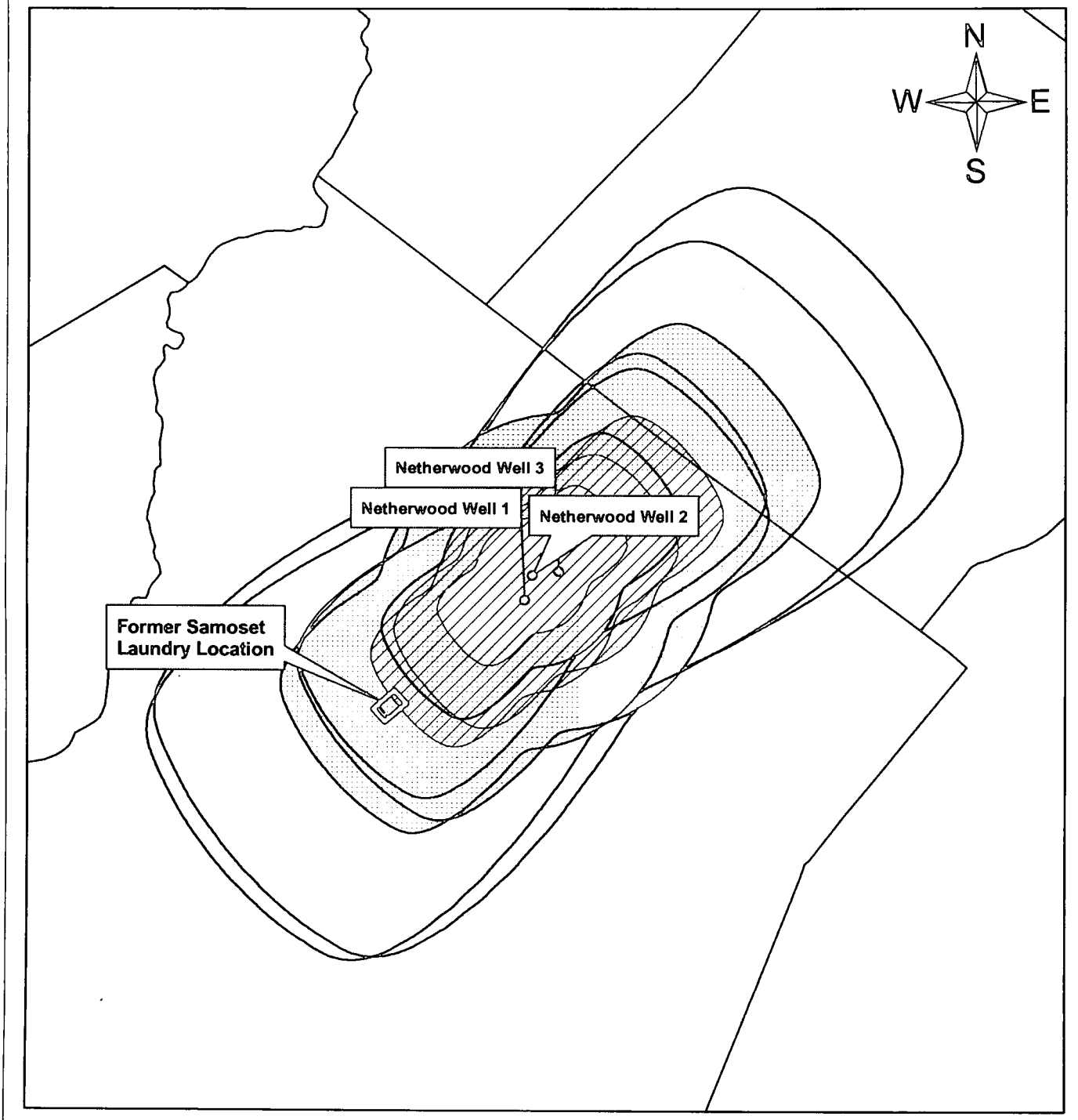
Map 9 of Population* Rings ,
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union County, New Jersey
Lat: 40° 37' 42.00" , Long: -74° 24' 20.00"



Ring	1	(0.00- 0.25)	has Population:	1395
Ring	2	(0.25- 0.50)	has Population:	4545
Ring	3	(0.50- 1.00)	has Population:	17241
Ring	4	(1.00- 2.00)	has Population:	45027
Ring	5	(2.00- 3.00)	has Population:	50001
Ring	6	(3.00- 4.00)	has Population:	61309

*Based on 1990 Census Data.


City of
Plainfield
345312
Former Samoset Property
ZONE AO
DEPTH 1
ZONE AH
ELEV 170
ZONE AO
DEPTH 1
MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 M
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D
COASTAL
OTHERWIS
This is an official copy
was extracted using F
or amendments which
Program flood maps cha
MAP 10
Former Samoset Laundry
902 - 924 North Avenue
Plainfield, Union Cnty, NJ
Flood Insurance Map
Dated: Sept. 20, 2006



0 750 1,500 3,000 Feet

Legend

- Netherwood Wells 1, 2 & 3

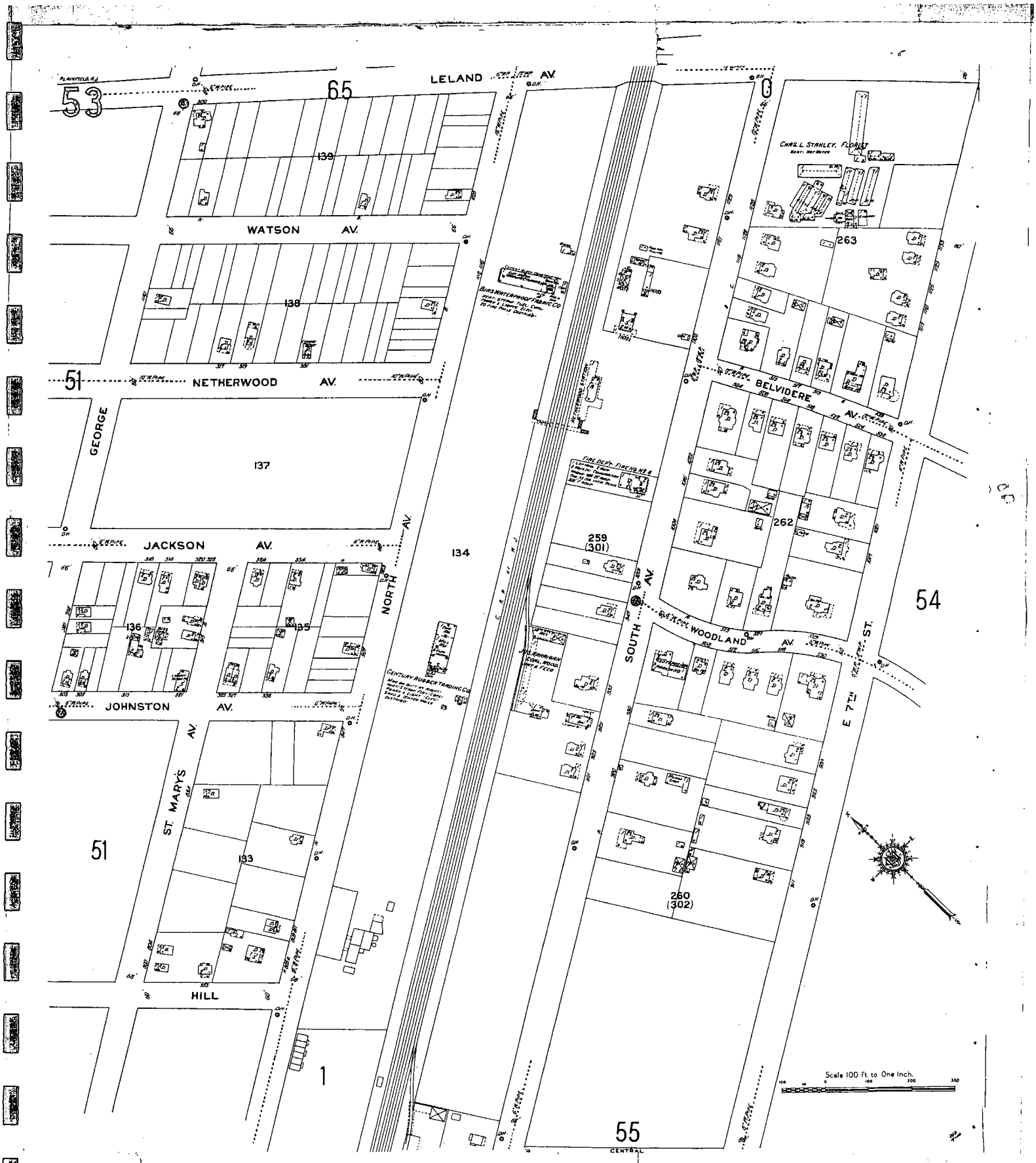
Well TIER

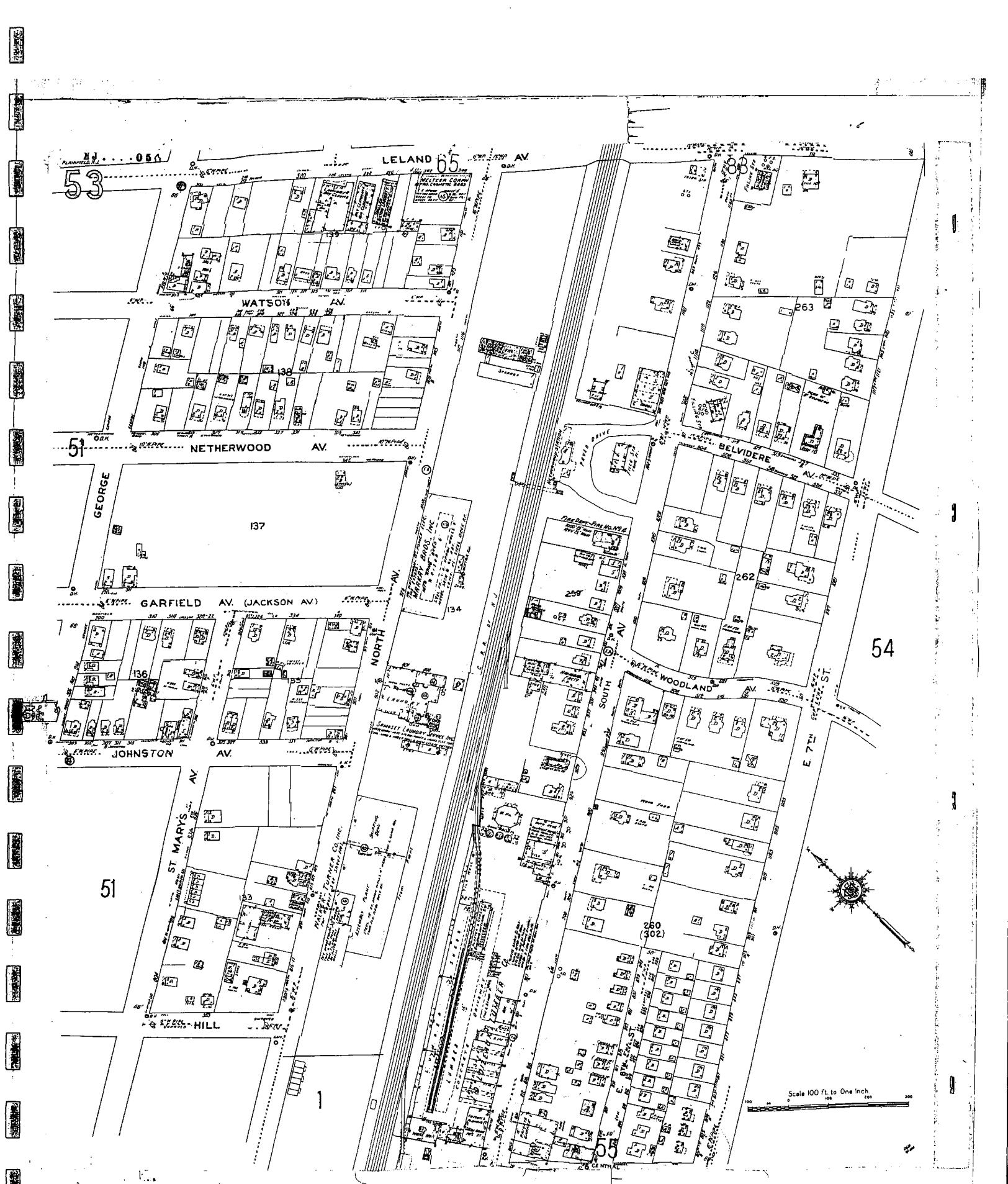
- Tier 1: 2-yr travel time
- Tier 2: 5-yr travel time
- Tier 3: 12-yr travel time

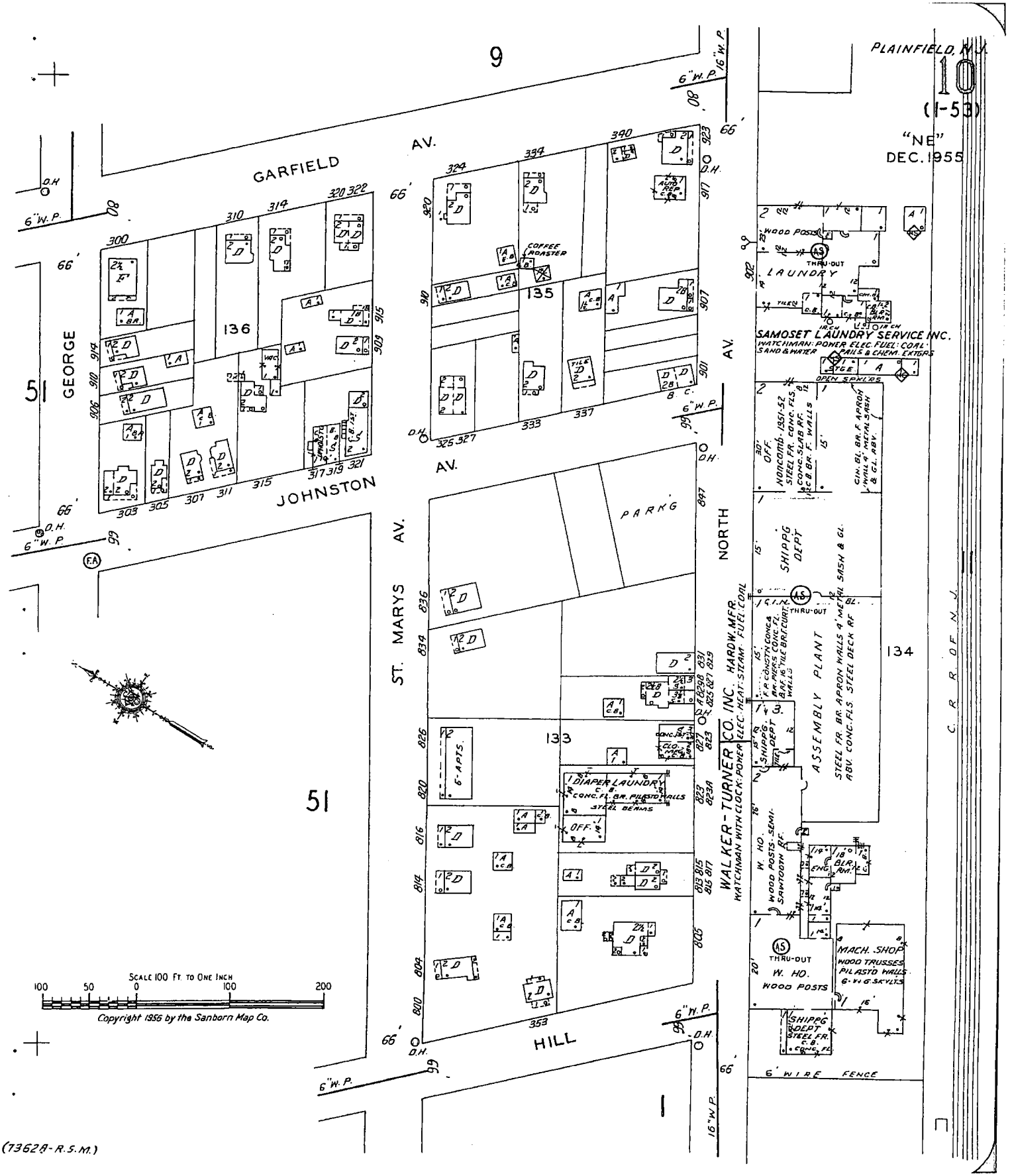
MAP 11
Samoset Laundry Facility
902 - 924 North Avenue
Plainfield, Union Cnty, NJ

NJDEP Wellhead Protection Area Map
Dated: 2002

ATTACHMENT A


53
65
LELAND AV.
WATSON AV.
139
138
51
NETHERWOOD AV.
GEORGE
137
JACKSON AV.
136
135
134
NORTH AV.
JOHNSTON AV.
ST. MARYS AV.
133
HILL
1
51
259
(301)
SOUTH AV.
CHAS. L. STANLEY, FLORIST
263
BELVIDERE AV.
262
WOODLAND AV.
E 7TH ST.
54
260
(302)
55
CENTRAL
Scale 100 Ft. to One Inch.


LELAND AV.
WATSON AV.
NETHERWOOD AV.
GEORGE
GARFIELD AV. (JACKSON AV.)
JOHNSTON AV.
NORTH AV.
SOUTH AV.
ST MARYS AV.
HILL
BELVIDERE AV.
WOODLAND AV.
E 7TH ST.
E 8TH ST.
53
65
88
51
137
138
139
136
135
134
263
262
260
(302)
54
55
1
Scale 100 Ft. to One Inch.



(7362A-R.S.M.)

ATTACHMENT B

ATTACHMENT C

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

JOHN W. GASTON JR., P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

November 15,1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr Philip Walker
125 Church St.
Plainfield, NJ

Re:Groundwater Investigation
Plainfield / Union County

Dear Mr. Walker:

As part of an investigation of possible sources of groundwater contamination in the industrial area of Plainfield, an inspection of the former Samoset Dry Cleaning (Samoset) facility was conducted by a representative of the Division of Water Resources (DWR) on September 26,1985. During the inspection the following observations were made:

1. Mr. Phillip Walker is the current owner of the Samoset facility which has been out of operation for approximately 10 years.

2. During the operation Samoset used the following solvents;

a. Mineral Spirits	2500gal.	underground tank
b. Stoddard Solvent	550gal.	aboveground tank
c. Perchloroethlene	100gal.	aboveground tank
d. Napthalene	550gal.	aboveground tank
e. Clean Solvent	2000gal.	underground tank

3. The floor drain in the tank room is believed to discharge to a shallow pit on the side of the building.

4. A production well exists on the Samoset property which has been abandoned.

DWR has determined that a potential exists for groundwater contamination from the shallow pit and the

underground solvent tanks. Unpermitted discharges to the groundwater are in violation of N.J.S.A. 58:10A-1 et. seq., the New Jersey Water Pollution Control Act, and N.J.S.A. 58:10-23.11c et. seq., the Spill Compensation and Control Act. The elimination of the discharges is of particular importance because the groundwater in this area is used as potable supply. Specificaly several potable water supply wells are located within 1000 yards of the former Samoset facility.

You are therefore Directed to:

1. Provide access to the shallow pit and the well located on the Samoset facility property for sampling.

2. Submit a written report to this office by December 15, 1985 detailing the corrective actions taken.

Failure to comply with this DIRECTIVE may result in further enforcement action by this office, including the imposition of penalties, pursuant to N.J.S.A. 58:10A-10.

If you have any questions concerning this DIRECTIVE, please contact Mr Anthony DeCandia of this office at (201)669-3900.

Very truly yours,

Stefan Sedlak

Stefan D. Sedlak
Asst. Chief
Metro Bureau of
Regional Enforcement

E126:

cc: Ms. Ruby Hodge H.O.
Richard Cerbone NJGS

751 374 840

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to Philip Walker	
Street and No. 125 Church Street	
P.O. State and ZIP Code Plainfield, NJ	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date 3/7/86	

PS Form 3800, Feb. 1982

* U.S.G.P.O. 1983-403-517

840

Rahway N.J. 07065

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL
DIVISION OF WATER RESOU
METRO BUREAU OF REGIONAL E
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY

JOHN W. GASTON JR., P.E.
DIRECTOR

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr Philip Walker
125 Church St.
Plainfield, NJ

Re: Groundwater Investigation
Plainfield / Union County

Dear Mr. Walker:

As part of an investigation of po groundwater contamination in the indus Plainfield, a reinspection of the former Samoset Dry Cleaning (Samoset) facility was conducted by a representative of the Division of Water Resources (DWR) on December 16, 1985.

Soil samples were taken from the collection drain on the north-east side of the building and from the drain in the tank room. Analysis gave the following results:

Collection Drain	1,2 dichloroethene	5675 ppb
	tetrachloroethene	7290 "
	trichloroethene	700 "
Tank Room Drain	1,2 dichloroethene	125 "

The Plainfield Bureau of Fire Prevention records indicate the presence and capacities of a number of above and below ground tanks as follows:

1. 2500 gal. underground tank used to store mineral spirits.
2. 2000 gal. underground tank used to store clean solvent.
3. 10,000 gal. underground fuel oil tank located on the northeast side of the facility.
4. 550 gal. and 2000 gal. underground gasoline tank located behind the facility.
5. 100 gal. above ground perchloroethene tank.

6. 550 gal. above ground napthalene tank.
7. 550 gal. above ground stoddard solvent tank.

During the inspection it was revealed that several of the above ground tanks located in the tank room were partially filled.

DWR investigations have concluded that one or more of these tanks as well as past practices of the Samoset Laundry facility may have contributed to the aforementioned groundwater contamination. As the present owner of the Samoset facility you are therefore Directed to:

1. Locate the below ground tanks on the above list and submit a report of the contents and physical condition of each tank within 60 days of the date of this Directive.

2. All liquids present in the above ground and below ground tanks shall be removed and properly disposed of in accordance with the requirements of N.J.A.C. 7:26-1 et seq.

3. Submit a written response within thirty (30) days of the date of this Directive outlining steps to be taken to comply with this Directive.

The written response and abovementioned report shall be submitted to:

Mr. Stefan D. Sedlak
Assistant Chief
Metro Bureau of Regional Enforcement
NJDEP-Division of Water Resources
2 Babcock Place
West Orange, NJ 07052

Failure to comply with this Directive will result in appropriate enforcement action pursuant to the New Jersey Water Pollution Control Act N.J.S.A. 58:10A-1 et seq. and the Spill Compensation and Control Act N.J.S.A. 58:10-23.11 et seq.

If there are any questions concerning this matter please contact Mr. Anthony DeCandia of this office at (201)669-3900.

Very truly yours,

Stefan Sedlak

Stefan D. Sedlak
Assistant Chief

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
METRO BUREAU OF REGIONAL ENFORCEMENT
2 BABCOCK PLACE
WEST ORANGE, NEW JERSEY 07052

JOHN W. GASTON JR., P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

June 6, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr Philip Walker
125 Church St.
Plainfield, NJ

Re: Groundwater Investigation
Plainfield / Union County

Dear Mr. Walker:

As part of a groundwater investigation of the Plainfield Industrial area an inspection of the Samoset facility was conducted by representatives of the Division of Water Resources (DWR). This inspection lead to several sampling episodes within the tank-room and in the yard area. Analytical data from soil sampling conducted at the facility on December 16, 1985 and April 23, 1986 revealed elevated concentrations of volatile organics (see attached list).

Based on these analyses it has been determined that Samoset is a probable contributor to the groundwater contamination in the Plainfield area. As the present owner of the Samoset facility, you are therefore DIRECTED to initiate a Soil Boring Investigation for the Samoset facility in Plainfield. A work plan for the investigation is to be submitted to DWR for approval. The work plan is to be prepared by a qualified hydrogeologist and is to include at a minimum the following:

1. A history of the facility including types of discharges, solvents used, and number and location of underground tanks.

2. Borings are to be installed in sufficient number and depth to allow full delineation of the extent of soil contamination in the area of the discharge drainage pit as well as the underground tanks.

3. Soil and water sampling and analytical procedures shall be designed to ensure representative monitoring results. At a minimum the program shall include procedures and techniques for :

   i) Sample collection;

   ii) Sample preservation and shipment;

   iii) Analytical procedures; and,

   iv) Chain of Custody control.

4. These procedures shall be incorporated into a quality assurance/quality control (QA/QC) plan using the format designated in the USEPA Document OWRS QA-1 entitled Guidance For Preparation of Combined Work/ Quality Assurance Project Plans for Environmental Monitoring.

5. Samples are to be analyzed for volatile pollutants as listed in N.J.A.C. 7:14A Appendix B, Table II using approved USEPA methods by a laboratory certified pursuant to N.J.A.C. 7:18.1 et seq.

6. A report containing the findings of the investigations shall be prepared and include:

   i) Stratigraphic logs for each boring and test pit;

   ii) Site plan of appropriate scale showing the locations of all borings and test pits;

   iii) Analytical data from all sample analyses;

7. A schedule for the implementation of the Soil Boring Investigation and submission of the report shall be included in the work plan.

The Soil Boring Investigation Work Plan shall be submitted to DWR no later than July 8, 1986. Upon DWR's approval of the work plan, Mr. Walker shall implement the Soil Boring Investigation in accordance with the approved time schedule.

All submittals called for in this Directive shall be made to :

Mr. Stefan D. Sedlak, Assistant Chief
Metro Bureau of Regional Enforcement
Division of Water Resources
2 Babcock Place
West Orange, New Jersey 07052

Failure to comply with this Directive will result in appropriate enforcement action pursuant to the New Jersey Water Pollution Control Act N.J.S.A. 58:10A-1 et seq. and the Spill Compensation and Control Act N.J.S.A. 58:10-23.11 et seq.

If there are any questions concerning this matter please contact Mr. Anthony DeCandia of this office at (201)669-3900.

Very truly yours,

Stefan D. Sedlak
Assistant Chief
Metro Bureau of
Regional Enforcement

E126

cc: Ruby Hodge, H.O.
Richard Cerbone, NJGS
Randy Vieser, ETWC

bcc: Marianne Montgomery
Karen Jentis,

SOIL AND LIQUID
SAMPLING ANALYSES

SAMOSET DRY CLEANING
PLAINFIELD, NJ

LOCATION	CONTAMINANT	CONCENTRATION
DECEMBER 16, 1985		
TANK ROOM	1,2 dichloroethene	125
DRAINAGE PIT	1,2 dichloroethene	5675
	Tetrachloroethene	7290
	Trichloroethene	700
APRIL 23, 1986		
DRAINAGE PIT	1,2 dichloroethene	180
	Tetrachloroethene	28000
	Trichloroethene	4020
DRAINAGE PIT (liquid)	Tetrachloroethene	7017
	Trichloroethene	59.68
	o-Xylene	.54
	trans 1-2 dichloroethene	.94
	cis 1-2 dichloroethene	2.15
	Chlorobenzene	.77
SOIL BORING 6 Ft. from PIT	Tetrachloroethene	1205
SAMPLE OF SAND IN UNDERGROUND TANK	Benzene	82000
	n-butylbenzene	1290
	sec-butylbenzene	2955
	tert-butylbenzene	1590
	Ethylbenzene	12000
	Cumene	630
	p-cymene	19000
	Styrene	7730
	Toluene	26000
	1,2,4 trimethylbenzene	35000
	1,3,5 trimethlybenzene	37000

concentration in parts per billion (ppb)

DWR/ad

ATTACHMENT D

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235A Rt. 23 South, P.O. Box 648 Wayne, NJ 07474 Phone: (201)-633-7900 FAX: (201)-633-7482
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609)-683-7600 FAX: (609)-683-1556

Certified Mail P424695270
Return Receipt Requested

April 18, 1991

Mr. John Ruhle
NJDEP Bureau of Underground Storage Tanks
401 East State Street
CN 029
Trenton, New Jersey 08625-0029

Re: Jet Plastics
902 North Avenue
Plainfield, New Jersey
BUST Case #91-3-8-1216-29
EWMA Case #91063

Dear Mr. Ruhle:

As per the request of Mr. John Bailey of Crestmont Federal Savings, enclosed please find the EWMA report summary of the activities conducted at the above referenced site. Should you have any questions or require additional information, please contact me at our Wayne office.

Sincerely,

Chris Langewisch

Environmental Waste Management Associates
Chris Langewisch, Project Manager

cc: Richard S. Greenberg, Ph.D., President, EWMA
Tracy Straka, Director of Operations, EWMA
John Bailey, Vice President, Crestmont Federal Savings

enclosure

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235A Rt. 23 South, P.O. Box 648 Wayne, NJ 07474 Phone: (201)-633-7900 FAX: (201)-633-7482
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609)-683-7600 FAX: (609)-683-1556

March 25, 1991

Mr. John Bailey
Commercial Lending Department
Crestmont Federal Savings
2035 Lincoln Highway
Edison, New Jersey 08817

RE: Site Inspection/Subsurface Investigation
Jet Plastics
902 North Avenue
Plainfield, New Jersey

EWMA Case #91063

Dear Mr. Bailey:

On February 15, 1991, a senior environmental scientist from Environmental Waste Management Associates ("EWMA") conducted a site inspection of the above referenced property. The walk-through of the subject facility was conducted to identify any obvious areas of environmental concern in and around the subject property.

The subject building is a two story concrete block building, with a concrete slab on grade floor, and a flat deck roof. The interior of the building was burned out due to a recent fire. The interior walls appeared to be constructed of sheetrock in some areas.

The exterior property is mostly unpaved. One small area near the entrance gate was paved with asphalt which was noted to be in poor condition.

During the site inspection which was conducted on February 15, 1991, at the above referenced facility, several areas of environmental concern were identified:

1. Two tank trucks stored on the property with staining on the unpaved ground beneath them.

2. Stained areas on the ground at the rear of the building.

3. Several large boilers and/or tanks in the rear interior section of the building with thermal wrap on both the tanks and associated piping. The wrap was noted to be in poor condition and is suspected to be comprised of asbestos containing material ("ACM").

4. Suspected underground storage tank(s) located at the rear of the building as evidenced by a vent.

5. Research into available records revealed that the building was formerly a commercial laundry operation, and that according to the Plainfield Fire Department, "several" underground storage tanks were located on the property.

In response to the above referenced area of environmental concern, it was determined that further investigation was warranted with respect to the underground storage tanks. On March 5, 1991, an environmental specialist from EWMA, as authorized by Crestmont Savings, returned to the site to supervise the installation of a series of test pits in order to attempt to determine the locations of any tanks on site.

A series of test pits were installed on the rear of the property and on the east side of the building. At the rear of the building, a 2,000 gallon tank was found which appeared to contain gasoline. Approximately 30 gallons of product were remaining in the tank. A 10,000 gallon fuel oil tank was also found in this area. This tank appeared to contain #4 oil, and had approximately 4,000 gallons of product remaining. The soils around these tanks were noted to be free of staining or any product odor. Samples were obtained from the soil around these tanks and were analyzed by a New Jersey certified lab. The laboratory analytical results indicate that no discharge appears to have taken place from these two tanks. The data summary tables are contained within attachment #1. The test pit, tank and sample locations are depicted on the site map in attachment #2. Please refer to attachment #3 for a copy of the laboratory analytical package.

Two additional tanks were discovered on the east side of the subject building; of 1,000 gallons and 550 gallons in capacity. Both were noted to have have the fills and vents broken off, and contained a mixture of sand, product and water. A strong solvent odor and staining was also noted in the soils surrounding these tanks. Soil samples were obtained for analysis and submitted to a New Jersey certified lab. Laboratory analysis as well as field observations and screening results confirmed that a discharge had taken place to the subsurface. As required, EWMA made notification to the NJDEP/BUST and case number 91-3-8-1216-29 was assigned.

The laboratory analytical results indicate that the tanks contain or contained aromatic and chlorinated hydrocarbon compounds, including trichloroethane, benzenes and xylenes.

If you have any questions or comments regarding the above referenced matter, please do not hesitate to call me at our Wayne office.

Sincerely,

Environmental Waste Management Associates
Chris Langewisch, Project Manager

cc: Richard S. Greenberg, Ph.D., President
Tracy Straka, Director of Operations

Attachment #1

Data Summary Tables

Sample Summary Table

Jet Plastics
902 North Avenue
Plainfield, New Jersey

March 1, 1991

Location	Sample	Depth	Screening
Tank #1			
Pit #1	S1	6.8'	0.0ppm
	S2	13'	0.0ppm
Pit #2	S3	6.8'	10.0ppm
	S4	13'	150ppm
Tank #2			
Pit #3	S5	11'	0.0ppm
	S6	13'	0.0ppm
Tank #3			
Pit #4	S7	6'	150ppm
	S8	13'	50ppm
Tank #4			
Pit #5	S9	6.5'	200ppm
	S10	13'	106ppm

Note: ppm = parts per million when screened with photoionization detector

Data Summary Table

Jet Plastics
902 North Avenue
Plainfield, New Jersey

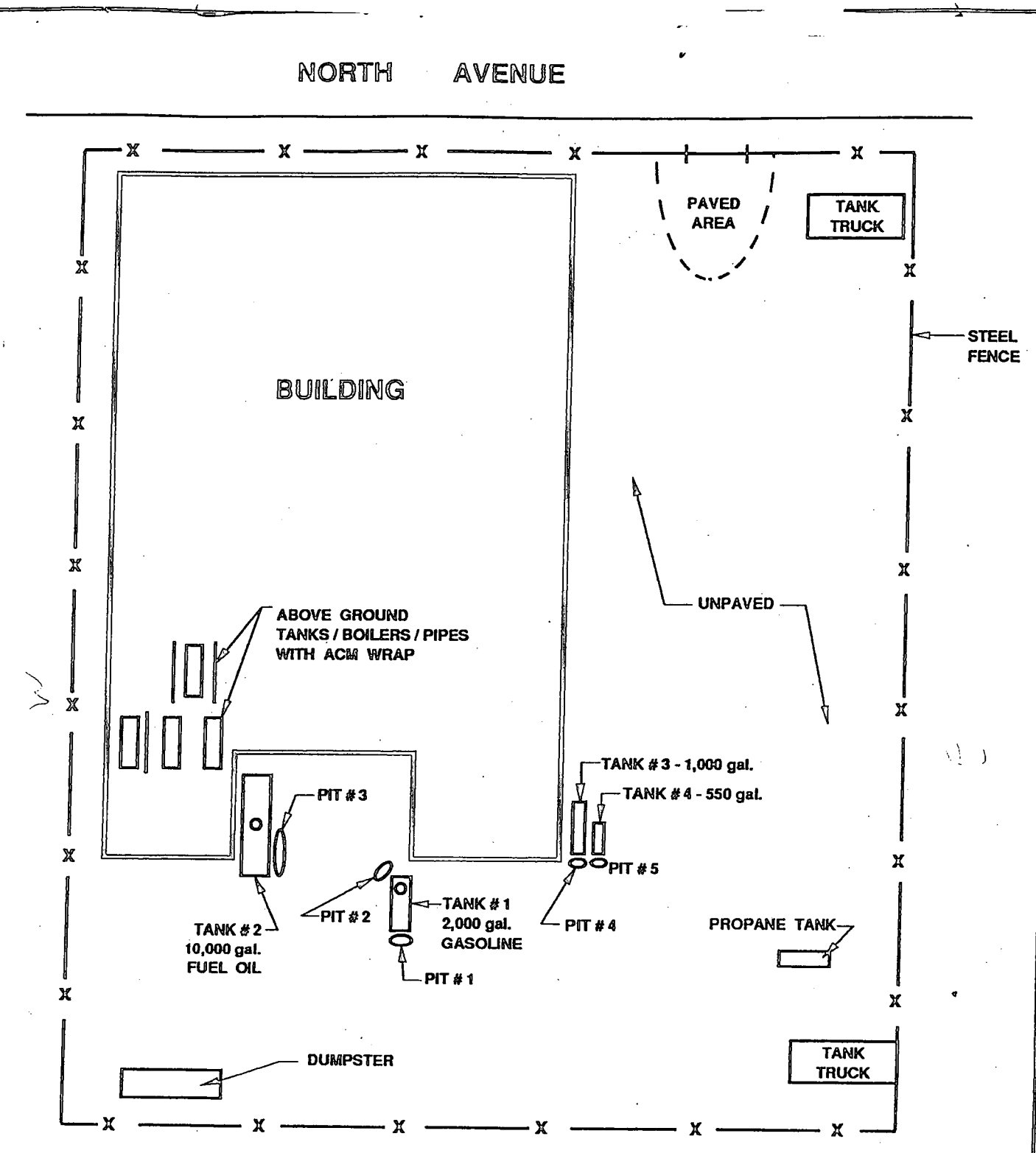
March 25, 1991

Sample	Targeted VO (ppm)	Non-Targeted VO (ppm)	Targeted BN (ppm)	Non-Targeted BN (ppm)	TPH (ppm)
S2	---	---	---	---	ND
S4	44.48 JB	342.41	---	---	ND
S5	---	---	---	---	21.1
S6	---	---	ND	ND	ND
S7	---	---	---	---	140
S8	---	---	---	---	65.4
S9	ND	543.8	---	---	1,660
S10	8.92 JB	3,728.8	---	---	1,300

NOTE: BN = Base/Neutrals
VO = Volatile Organics
ND = Not Detected
J = includes compounds detected below minimum detection limit
B = compounds detected in Blank as well as sample

Attachment #2

Site/Test Pit
Location Map



ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: NOT TO SCALE DATE: 2/22/91 DRAWN BY: A P CHECKED BY: C L	PROJECT# 91063
SITE PLAN JET PLASTICS 902 NORTH AVENUE PLAINFIELD, N J.		DRAWING# 1

ATTACHMENT E

G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

PHASE I ENVIRONMENTAL SITE ASSESSMENT

OF

PROPOSED T-MOBILE ANTENNA SITE
S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NEW JERSEY 07062
T-MOBILE SITE NO. NJ06560B

PREPARED FOR:

T-MOBILE
4 SYLVAN WAY, 2ND FLOOR
PARSIPPANY, NJ 07054

DATE ISSUED: MAY 20, 2004

GCE PROJECT NUMBER: 04-078-00

410 SAW MILL RIVER ROAD • ARDSLEY, NY 10502 • TEL: (914) 674-4346 • FAX: (914) 674-4348
WWW.GCENVIRONMENTAL.COM
L.I. OFFICE: (631) 249-0147

E

The environmental assessment described herein was conducted by and/or under the supervision of the undersigned, of G. C. Environmental, Inc. (GCE). GCE's investigation consisted solely of the activities described in the Introduction of this report, in accordance with Proposal/Work Order Number 04084, and is subject to the Limitations and Service Constraints provided in Appendix A and the Consulting Services Agreement signed prior to initiation of the assessment.

Prepared By:

Jason Rankin
Staff Scientist

05/20/04
Date

Report Reviewed and Approved By:

Igor Goldstein
Manager, Engineering

5/20/04
Date

Nahum Kedem, P.G.
Vice President

5/20/04
Date

EXECUTIVE SUMMARY

This report presents the findings of a Phase I Environmental Site Assessment of the proposed T-Mobile Antenna Site (the Site) located at the S Ave/Rt 23 Plainfield property, 908 North Avenue, Plainfield, New Jersey (the Property), conducted by G. C. Environmental, Inc. (GCE) in accordance with the Consulting Services Agreement signed prior to initiation of the assessment, and the ASTM E1527-00 Standards.

The Site consists of:

- An approximately 600-square-foot parcel of gravel-lined land for proposed T-Mobile antenna installation and supporting equipment located on the northern portion of the Property (Antenna & Equipment Parcel); and;

- Approximately 45 linear feet of gravel-lined land for proposed utility lines (Line Run) extending to the southeast from a proposed pole to be located on the northwestern portion of the Property to the Antenna & Equipment Parcel.

During the site-inspection, all areas of the Site and the Property were inspected, except for the interiors of the storage containers located throughout the Property and the interior of the office trailer located on the northeastern portion of the Property, access to which was not provided.

The surrounding area is utilized for industrial, residential, transportation and commercial purposes.

To the north of the Site is a portion of the Property consisting of gravel-lined land. Further to the north is vegetated land and commercial properties, beyond which is North Avenue and residential properties.

To the east of the Site is a part of the Property consisting of gravel-lined land, several storage containers and the office trailer. Further to the east is vegetated land and the New Jersey Transit railroad tracks, beyond which are commercial properties.

To the south of the Site is a portion of the Property consisting of gravel-lined land and several storage containers. Further to the south are industrial properties and the New Jersey Transit Railroad tracks.

According to the Environmental Data Resources, Inc. (EDR) report, the Property is listed as a State Hazardous Waste Sites (SHWS) site:

Samoset Laundry
902 North Avenue
Plainfield City, NJ
This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of

contamination". The case status is listed as "pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

According to the EDR report, a nearby property is listed as a NJ Spills Information Database (SPILLS) site:

Jet Plastics
902 North Ave
Plainfield, NJ
This SPILLS listing is most likely associated with a property located adjacent to the Property, approximately 300 feet to the southwest and hydraulically cross-gradient of the Site. On March 8, 1991, a SPILLS case was opened when test pits found two (2) 550-gallon tanks and soil contamination on this site. Based on its location, this SPILLS site is not likely to environmentally impact the Site.

To the west of the Site is a portion of the Property consisting of gravel-lined land and several storage containers. Further to the west is North Avenue, beyond which are commercial and residential properties.

G. C. Environmental, Inc. (GCE) has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-00 of the Site. This assessment has revealed no evidence of recognized environmental conditions in connection with the Site, except for the following:

- According to Mr. Phil Suydam, the Property owner, and based on GCE's visual inspection, the Property is utilized for storage of construction equipment and construction maintenance vehicles throughout the Property by off-site tenants. During the site-inspection there were approximately ten (10) trucks and four (4) automobiles parked on the Property. No leaks and/or spills associated with these vehicles were observed. However, the usage of the Property as a parking area may have environmentally impacted the Site.

- The 1910 Sanborn Fire Insurance map shows the Site as vacant land and the Property as developed with a historical building located on the central portion of the Property labeled Century Rubber Trading Co. According to the City of Plainfield Building Department (CPBD) records, Century Rubber Trading Co. occupied the building from 1904 to 1924. According to the CPBD records, Samoset Laundry Service Inc. occupied the building on the Property from 1931 to 1971. The 1982 Sanborn Fire Insurance map show the Site as a parking lot and the portion of the portion of the Property as developed with the historical building labeled as Samoset Laundry Inc. According to the CPBD records, the historical building was occupied by First Avenue Cleaners in 1982. Historical industrial and commercial usages of the Property may have environmentally impacted the Site.

- According to the EDR report, the Property is listed as a SHWS site:

  Samoset Laundry
  902 North Avenue
  Plainfield City, NJ
  This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as "pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

Based on the above findings, the following recommendation is made:

- A Limited Phase II Environmental Site Assessment should be performed in order to determine if potential and confirmed releases of petroleum products and/or hazardous materials associated with current and/or historical usages of the Property have environmentally impacted the Site.

According to the Federal Emergency Management Agency Flood Insurance Rate Map Index for the City of Plainfield, Union County, New Jersey, Community Panel No. 345312 0001D effective date July 16, 1997, the Site is located in an area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined (Zone AO).

Although it is not a recognized environmental condition, the engineering considerations should be made with respect to the Site's location within an area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined (Zone AO).

Since soil or groundwater testing was not performed as part of this assessment, GCE makes no direct representation of soil or groundwater quality conditions.

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LIST OF APPENDICES

1.0 PURPOSE

The principal objectives of this Phase I Environmental Site Assessment are to:

- Identify the presence or likely presence of any potential asbestos-containing materials, hazardous materials, substances or wastes or petroleum products on the Site under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous materials, substances or wastes or petroleum products into structures on the Site or into the ground, groundwater or surface water of the Site;

- Identify the need for additional evaluation and/or investigation of the location, extent, source, and nature of any releases, or threat of releases, of hazardous materials, substances or wastes or petroleum products affecting the Site.

2.0 INTRODUCTION

This report presents the findings of a Phase I Environmental Site Assessment of the proposed T-Mobile Antenna Site (the Site) located at the S Ave/Rt 23 Plainfield property, 908 North Avenue, Plainfield, New Jersey (the Property), conducted by G. C. Environmental, Inc. (GCE) in accordance with the Consulting Services Agreement signed prior to initiation of the assessment, and the ASTM E1527-00 Standards.

The Site consists of:

- An approximately 600-square-foot parcel of gravel-lined land for proposed T-Mobile antenna installation and supporting equipment located on the northern portion of the Property (Antenna & Equipment Parcel); and;

- Approximately 45 linear feet of gravel-lined land for proposed utility lines (Line Run) extending to the southeast from a proposed pole to be located on the northwestern portion of the Property to the Antenna & Equipment Parcel.

During the site-inspection, all areas of the Site and the Property were inspected, except for the interiors of the storage containers located throughout the Property and the interior of the office trailer located on the northeastern portion of the Property, access to which was not provided.

On April 29, 2004, Mr. Jason Rankin and Mr. Matthew Mankovich of GCE conducted a site-inspection to assess the possible presence of petroleum products or hazardous materials, substances or wastes. GCE's investigation included reconnaissance of the Site and adjacent properties, background research, and review of available local, state, and federal regulatory records regarding the presence of hazardous materials, substances or wastes or petroleum products at or in the vicinity of the Site.

GCE's findings are based on the assessment of existing conditions at the Site and surrounding areas, local background research, evaluation of the Site's environmental setting, and review of records on file with local, state, and federal regulatory agencies. Please refer to Appendices B and C for the Site Information Summary and Information Sources, respectively.

3.0 SITE DESCRIPTION

3.1 Site Location and Legal Description

The Site is located in the City of Plainfield, Union County, New Jersey, approximately 120 feet to the southeast of the T-shaped intersection formed by Garfield Avenue and North Avenue. The Site consists of:

- An approximately 600-square-foot parcel of gravel-lined land for proposed T-Mobile antenna installation and supporting equipment located on the northern portion of the Property (Antenna & Equipment Parcel); and;

- Approximately 45 linear feet of gravel-lined land for proposed utility lines (Line Run) extending to the southeast from a proposed pole to be located on the northwestern portion of the Property to the Antenna & Equipment Parcel.

The Property is located on the southeast side of North Avenue, approximately 40 feet to the south of the T-shaped intersection by Garfield Avenue and North Avenue. The Property consists of an approximately 0.93-acre irregular-shaped parcel of gravel-lined land and is developed with an office trailer located on the northeastern portion of the Property and several storage containers located on the northern and southern portions of the Property, respectively. The remainder of the Property consists of gravel-lined land and storage areas for construction equipment and construction maintenance vehicles located throughout the Property. The frontage of the Property measures approximately 220 feet along the southeast side of North Avenue.

According to the City of Plainfield Tax Assessor's Office, the address corresponding to the Site is 908-24 North Avenue, Plainfield, NJ 07062. The Site is legally designated as Block 344, part of Lot 1. A Site Locus Map, Site Plan, USGS Topographic Map, and Photographs are provided in Figures 1, 2 and 3 and Appendix D, respectively.

According to the City of Plainfield Tax Assessor's Office, the current Property owner is Phil Suydam, 32 North Avenue, Fanwood, NJ 07023.

Under the Zoning Ordinance of the City of Plainfield, the Site is located in a Light Industrial District, designated as "LI".

3.2 Present Site Development and Usage

The Site consists of:

- An approximately 600-square-foot parcel of gravel-lined land for proposed T-Mobile antenna installation and supporting equipment located on the northern portion of the Property (Antenna & Equipment Parcel); and;

- Approximately 45 linear feet of gravel-lined land for proposed utility lines (Line Run) extending to the southeast from a proposed pole to be located on the northwestern portion of the Property to the Antenna & Equipment Parcel.

The Property consists of an approximately 0.93-acre irregular-shaped parcel of partially gravel-lined land and is developed as a commercial storage yard for tenants in the construction business. An office trailer is located on the northeastern portion of the Property, which, according to Mr. Phil Suydam, the Property owner, is utilized for office purposes by him. According to Mr. Suydam, the Property is utilized for storage of construction equipment and construction maintenance vehicles throughout the Property by off-site tenants. The remainder of the Property consists of gravel-lined land and storage areas for construction equipment and construction maintenance vehicles located throughout the Property. During the site-inspection there were approximately ten (10) trucks and four (4) automobiles parked on the Property. No leaks and/or spills associated with these vehicles were observed. However, usage of the Property as a parking area may have environmentally impacted the Site.

The Site and the Property can be accessed from North Avenue.

3.3 Physical Site Characteristics

According to the US Geological Survey (USGS) Topographic Map of Chatham, New Jersey Quadrangle, dated 1955, photorevised 1981, the Site's elevation is approximately 120 feet above mean sea level. Topographically, the Site is essentially level with no abrupt changes in elevation. The topography in the vicinity of the Site slopes gently to the south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site. Please refer to Figure 3 for the USGS Topographic Map.

There are no bodies of water or distressed vegetation located on-site. No signs of unusual environmental stress or soil staining were observed.

4.0 ENVIRONMENTAL SETTING

4.1 Geology and Hydrogeology

According to the 1996 Geologic Map of Northern New Jersey, prepared by the Department of Environmental Protection and Energy-Division of Science & Research, and the New Jersey Geologic Survey, the subsurface geology in the vicinity of the Site consists of reddish-brown to brownish-purple and grayish-red siltstone and shale. No information regarding depth to bedrock in the area of the Site was available for GCE's review.

According to the 1998 Aquifers of New Jersey Map, prepared by the New Jersey Department of Environmental Protection (DEP)-Division of Science & Research, and the New Jersey Geologic Survey, the Site lies within the Fractured Rock Aquifers of the Newark Basin Part of the Piedmont which consists of sandstone, siltstone, and shale of the Passaic, Towaco, Feltville and Boonton Formations.

Based on the topography and local waterways, general groundwater flow direction in the area of the Site could be inferred to be south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site. No information regarding depth to groundwater in the area of the Site was available for GCE's review.

4.2 Surface Water Resources and Drainage

There are no surface water resources on the Site. According to the Federal Emergency Management Agency Flood Insurance Rate Map Index for the City of Plainfield, Union County, New Jersey, Community Panel No. 345312 0001D effective date July 16, 1997, the Site is located in an area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined (Zone AO).

Stormwater runoff from the Site discharges via surface runoff and surface percolation to the south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site.

4.3 Sensitive Environmental Receptors

According to the 1984 U.S. Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory Maps for Chatham, New Jersey Quadrangle the nearest designated wetlands is a low-lying area located approximately 1,250 feet to the northwest of the Site which is designated as Riverine, Lower Perennial, Open Water (R20W). According to the 1986 New Jersey State Department of Environmental Protection (DEP) Freshwater Wetlands Maps for Chatham Southeast, New Jersey Quadrangle, the nearest designated wetlands is a low-lying

area located approximately 2,500 feet to the southwest of the Site which is designated as Palustrine, Emergent, Persistent, Saturated (PEMIB).

5.0 SITE INVESTIGATION

During the site-inspection, GCE was accompanied by Mr. Phil Suydam, the Property owner.

5.1 Site Utilities

The Site consists of gravel-lined land and is not connected to any utilities. According to Mr. Suydam, the Property is serviced by several utilities. Electric is provided by Public Service Electric & Gas (PSE&G). Natural gas is provided by Elizabethtown Company. Telecommunication service is provided by Verizon. Potable water is provided by municipal storm sewer system. Sanitary waste is directed into the municipal sanitary sewer system. Refuse removal is provided by a private hauler. Heat for the office trailer is provided by one (1) kerosene heater. No spills and/or leaks were observed in the area of the office trailer. Therefore, this kerosene heater is not likely to environmentally impact the Site.

5.2 Site Drainage

As discussed in Section 4.2, stormwater runoff from the Site discharges via surface runoff and surface percolation to the south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site. Roof runoff from the office trailer and storage containers located on the Property discharge via roof runoff onto gravel-lined land surrounding these structures and then via surface runoff and via surface percolation to the south-southwest to an unnamed tributary approximately 7,000 feet to the south-southwest of the Site. Stormwater runoff from the remainder of the Property discharges via surface runoff and surface percolation to the south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site

5.3 Tanks (Aboveground and Underground)

GCE's visual inspection of the Site did not reveal the presence of any aboveground or underground storage tanks.

GCE has contacted the County of Union Health Department (CUHD) for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Site and has not received their response to-date. GCE will review the CUHD response and provide all pertinent information to the client upon receipt.

GCE has contacted the City of Plainfield Health Department (CPHD) for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Site and has not received their response to-date. GCE will review the CPHD response and provide all pertinent information to the client upon receipt.

5.4 Transformers/PCB-Containing Equipment

GCE's visual inspection of the Site did not reveal the presence of any electrical transformers or other potential PCB-containing equipment.

5.5 Petroleum Products/Hazardous Materials and Substances

GCE's visual inspection of the Site did not reveal the storage or usage of petroleum products or hazardous materials or substances.

5.6 Waste Oil/Hazardous Waste

GCE's visual inspection of the Site did not reveal the presence of any suspect waste oil or hazardous waste.

5.7 Asbestos-Containing Materials (ACMs)

GCE's visual inspection of the Site did not reveal the presence of any suspect ACMs.

5.8 Lead Based Paint (LBP)

GCE's visual inspection of the Site did not reveal the presence of any suspect LBP.

5.9 Radon

According to the 1996 Radon Tier Assignment Report, New Jersey Department of Environmental Protection (DEP) – Radiation Protection Programs Bureau of Environmental Radiation, a total of one thousand two hundred fifty-five (1,255) structures in the City of Plainfield were screened, of which, one hundred and twenty-eight (128) structures, approximately ten (10%) had radon levels equal to or greater than 4.0 pico-Curies per liter (pCi/l). According to a US Environmental Protection Agency (EPA) guidance document entitled "A Citizen's Guide to Radon", August 1986, radon exposures in the range of 4.0 pCi/l "are considered average or slightly above average for residential structures."

6.0 HISTORICAL SITE USAGE

GCE's review of the Sanborn Fire Insurance maps and aerial photographs provided by Environmental Data Resources, Inc. (EDR), records on file at the City of Plainfield Building Department (CPBD) and an interview with Mr. Suydam reveal the history of the Site as follows:

Late 1907 – 1924 – According to the CPBD records, there was a brick factory building which was built in 1907 on the Property. The 1910 Sanborn Fire Insurance map shows the Site as vacant land and the Property as developed with a historical building located on the central portion of the Property labeled Century Rubber Trading Co. According to the CPBD records, Century Rubber Trading Co. occupied the building from 1904 to 1924.

1931 – 1972 – According to the CPBD records, Samoset Laundry Service Inc. occupied the building on the Property from 1931 to 1971. The 1951, 1956 and 1963 Sanborn Fire Insurance maps show the Site as vacant land and the Property as developed with a portion of the historical building located on the central portion of the Property labeled Samoset Laundry Service Inc. This historical building also occupied the area immediately adjacent to the south of the Property. The 1954, 1963, 1972 aerial photographs show the Site as vacant land and the Property as developed with a historical building located on the central portion of the Property.

1982 – The 1982 Sanborn Fire Insurance map show the Site as a parking lot and the portion of the portion of the Property as developed with the historical building labeled as Samoset Laundry Inc. According to the CPBD records, the historical building was occupied by First Avenue Cleaners in 1982.

1984 – 1995 – The 1984 and 1995 aerial photographs show the Site as vacant land and as developed with the historical building located on the central portion of the Property.

1999 – According to the CPBD records, a permit was filed for the historical building to be demolished on September 30, 1999. According to Mr. Suydam, the Property has been utilized for space rental purposes to several companies since late-1999.

Based on GCE's visual inspection, the Site and the Property usages have not been changed since.

Historical industrial and commercial usages of the Property may have environmentally impacted the Site.

7.0 SURROUNDING AREA INVESTIGATION

7.1 Present Usage

According to the Zoning Ordinance of the City of Plainfield and based on GCE's visual inspection, the surrounding area is utilized for industrial, residential, transportation and commercial purposes.

To the north of the Site is a portion of the Property consisting of gravel-lined land. Further to the north is vegetated land and commercial properties, beyond which is North Avenue and residential properties.

To the east of the Site is a part of the Property consisting of gravel-lined land, several storage containers and the office trailer. Further to the east is vegetated land and the New Jersey Transit railroad tracks, beyond which are commercial properties.

To the south of the Site is a portion of the Property consisting of gravel-lined land and several storage containers. Further to the south are industrial properties and the New Jersey Transit Railroad tracks.

According to the EDR report, the Property is listed as a State Hazardous Waste Sites (SHWS) site:

Samoset Laundry
902 North Avenue
Plainfield City, NJ
This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as "pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

According to the EDR report, a nearby property is listed as a NJ Spills Information Database (SPILLS) site:

Jet Plastics
902 North Ave
Plainfield, NJ
This SPILLS listing is most likely associated with a property located adjacent to the Property, approximately 300 feet to the southwest and hydraulically cross-gradient of the Site. On March 8, 1991, a SPILLS case was opened when test pits found two (2) 550-gallon tanks and soil contamination on this site. Based on its location, this SPILLS site is not likely to environmentally impact the Site.

To the west of the Site is a portion of the Property consisting of gravel-lined land and several storage containers. Further to the west is North Avenue, beyond which are commercial and residential properties.

7.2 Historical Usage

A review of the Sanborn Fire Insurance maps, aerial photographs provided by EDR and an interview with Mr. Suydam revealed that past land-utilization in the area of the Site has been for industrial, residential, transportation and commercial purposes since at least 1910.

7.3 Tanks

GCE's visual inspection did not reveal the presence of any aboveground or underground storage tanks.

According to Mr. Suydam, one (1) underground storage tank (UST) was located on the central portion of the Property, approximately 50 feet to the southwest and hydraulically cross-gradient of the Site. Upon its discovery, this tank was found to be abandoned and filled with sand. Furthermore, this UST was removed circa 1995. Based on its location, this removed UST is not likely to environmentally impact the Site.

GCE has contacted the CUHD for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Property and has not received their response to-date. GCE will review the CUHD response and provide all pertinent information to the client upon receipt.

GCE has contacted the CPHD for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Property and has not received their response to-date. GCE will review the CPHD response and provide all pertinent information to the client upon receipt.

According to the EDR report, a nearby property is listed as a SPILLS site:

Jet Plastics
902 North Ave
Plainfield, NJ
This SPILLS listing is most likely associated with a property located adjacent to the Property, approximately 300 feet to the southwest and hydraulically cross-gradient of the Site. On March 8, 1991, a SPILLS case was opened when test pits found two (2) 550-gallon tanks and soil contamination on this site. Based on its location, this SPILLS site is not likely to environmentally impact the Site.

7.4 Transformers/PCB-Containing Equipment

GCE's visual inspection of the immediate surrounding area revealed the presence of three (3) pole-mounted electrical transformers located on the east side on North Avenue approximately 200 feet to the west and hydraulically cross-gradient of the Site. The age, ownership and PCBs-content of these electrical transformers are unknown. No leaks and/or spills associated with these electrical transformers were observed. Therefore, these three (3) electrical transformers are not likely to environmentally impact the Site.

7.5 Petroleum Products/Hazardous Materials, Substances and Wastes

In addition to petroleum products which are stored in the storage tanks as described in section 7.3, GCE's visual inspection of the immediate surrounding area revealed the presence of two (2) 55-gallon steel waste oil drums located on the northeastern portion of the Property approximately 15 feet to the southeast and hydraulically cross-gradient of the Site and one (1) approximately 55-gallon empty diesel fuel container located on the eastern portion of the Property and approximately 30 feet to the southeast and hydraulically cross-gradient of the Site. According to Mr. Suydam, waste oil is generated during maintenance activities for construction vehicles and trucks which are performed on the Property and removed off the Property by a tenant to a mechanic shop who collects waste oil. No spills and/or leaks associated with the two (2) 55-gallon used oil drums and the one (1) diesel fuel container were observed. Based on their description, these drums and the container are not likely to environmentally impact the Site. GCE's visual inspection also revealed the presence of one (1) empty gasoline delivery truck located approximately 20 feet to the south and hydraulically cross-gradient of the Site, one (1) empty gasoline delivery truck located approximately 200 feet to the southwest and hydraulically cross-gradient of the Site and two (2) flammable gas cylinders located approximately 20 feet to the south-southeast and hydraulically cross-gradient of the Site. Based on their description and location these gasoline trucks and gas cylinders are not likely to environmentally impact the Site.

Auto-maintenance activities conducted on the Property may have environmentally impacted the Site.

According to the EDR report, the Property is listed as a SHWS site:

Samoset Laundry
902 North Avenue
Plainfield City, NJ
This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as

"pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

For additional information regarding environmentally regulated sites in the vicinity of the Site, please refer to Section 8.0 – Regulatory Information.

8.0 REGULATORY INFORMATION

8.1 Local Regulatory Review

GCE has contacted the CUHD for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Property and has not received their response to-date. GCE will review the CUHD response and provide all pertinent information to the client upon receipt.

GCE has contacted the CPHD for any information relative to petroleum storage tanks, leaks, spills and/or environmental violations which may have been recorded with respect to the Property and has not received their response to-date. GCE will review the CPHD response and provide all pertinent information to the client upon receipt.

8.2 State Regulatory Review

GCE has obtained and reviewed a State of New Jersey Environmental Database report for the Site, provided by Environmental Data Resources, Inc. (EDR). The EDR report includes New Jersey State Department of Environmental Protection (DEP) State Hazardous Waste Sites (SHWS), Solid Waste Facility Directory (SWF/LF), NJ Spills Information Database (SPILLS), Leaking Underground Storage Tanks (LUST), NJ Major Facilities (MAJOR FACILITIES) and Underground Storage Tanks (UST) sites. The following locatable sites were identified:

State Hazardous Waste Sites (SHWS)

There are twenty-one (21) SHWS sites located within a 1.0-mile radius of the subject Site. The Property is listed as a SHWS site:

Samoset Laundry
902 North Avenue
Plainfield City, NJ
This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as

"pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

One (1) of the remaining twenty (20) SHWS sites is located hydraulically up-gradient from the Site:

Inplant Corporation
324 to 330 Leland Avenue
Plainfield City, NJ
This SHWS site is located approximately 1,040 feet to the north-northeast and hydraulically up-gradient from the Site. This SHWS site was listed as "sites with on-site source(s) of contamination". The case status is listed as "pending". Based on its distance from the Site, this SHWS site is not likely to environmentally impact the Site.

None of the remaining nineteen (19) SHWS sites are located on the Site, on the adjacent properties or hydraulically up-gradient of the Site. Therefore, these nineteen (19) SHWS sites are not likely to environmentally impact the Site.

Solid Waste Facility Directory (SWF/LF)

There are no SWF/LF sites located within a 0.5-mile radius of the subject Site.

NJ Spills Information Database (SPILLS)

There are one hundred and seven (107) SPILLS sites located within a 0.5-mile radius of the subject Site. A nearby property is listed as a SPILLS site:

Jet Plastics
902 North Ave
Plainfield, NJ
This SPILLS listing is most likely associated with a property located adjacent to the Property, approximately 300 feet to the southwest and hydraulically cross-gradient of the Site. On March 8, 1991, a SPILLS case was opened when test pits found two (2) 550-gallon tanks and soil contamination on this site. Based on its location, this SPILLS site is not likely to environmentally impact the Site.

One (1) of the remaining one hundred and six (106) SPILLS sites is located hydraulically up-gradient of the Site:

On roadside
Harvey Place / George Street
Plainfield, NJ
This SPILLS site is located approximately 2,245 feet to the north-northeast and hydraulically up-gradient of the Site. On September 13, 1998, a SPILLS case was opened when a transformer failure from a storm

caused a mineral oil spill. Based on its description and distance from the Site, this SPILLS site is not likely to environmentally impact the Site.

None of the remaining one hundred and five (105) SPILLS sites are located on the Site, on the adjacent properties or hydraulically up-gradient of the Site. Therefore, these one hundred and five (105) SPILLS sites are not likely to environmentally impact the Site.

Leaking Underground Storage Tanks (LUST)

There are twenty-nine (29) LUST sites located within a 0.5-mile radius of the subject Site. None of the twenty-nine (29) LUST sites are located on the Site, on the adjacent properties or hydraulically up-gradient of the Site. Therefore, the twenty-nine (29) LUST sites are not likely to environmentally impact the Site.

NJ Major Facilities (MAJOR FACILITIES)

There are no MAJOR FACILITIES sites located within a 0.25-mile radius of the subject Site.

Underground Storage Tanks (UST)

There are fourteen (14) UST sites located within a 0.25-mile radius of the subject Site. None of these fourteen (14) UST sites are located on the Site, on the adjacent properties or hydraulically up-gradient of the Site. Therefore, these fourteen (14) UST sites are not likely to environmentally impact the Site.

8.3 Federal Regulatory Review

GCE has obtained and reviewed a US Environmental Protection Agency (EPA) Environmental Database for the Site, provided by Environmental Data Resources, Inc. (EDR). The EDR report includes EPA National Priorities List (NPL), Proposed National Priority List (PROPOSED NPL), RCRA Corrective Action Activity (CORRACTS), RCRA Permitted Treatment, Storage, Disposal Facilities (RCRA-TSD), Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), CERCLIS No Further Remedial Action Planned (CERC-NFRAP), RCRA Registered Large Generators of Hazardous Waste (RCRIS LQG), RCRA Registered Small Generators of Hazardous Waste (RCRIS SQG) and Emergency Response Notification System of Spills (ERNS) sites. The following locatable sites were identified:

National Priority List (NPL)

There are no NPL sites located within a 1.0-mile radius of the subject Site:

Proposed National Priority List (PROPOSED NPL)

There are no PROPOSED NPL sites located within a 1.0-mile radius of the subject Site.

RCRA Corrective Action Activity (CORRACTS)

There are no CORRACTS sites located within a 1.0-mile radius of the subject Site.

RCRA Permitted Treatment, Storage, Disposal Facilities (RCRIS-TSD)

There are no RCRIS-TSD sites located within a 0.5-mile radius of the subject Site.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

There is one (1) CERCLIS site located within a 0.5-mile radius of the subject Site. This one (1) CERCLIS site is not located on the Site, on the adjacent properties or hydraulically up-gradient of the Site. Therefore, this one (1) CERCLIS site is not likely environmentally impact the Site.

CERCLIS No Further Remedial Action Planned (CERC-NFRAP)

There are no CERC-NFRAP sites located within a 0.5-mile radius of the subject Site.

RCRA Registered Large Generators of Hazardous Waste (RCRIS LQG)

There are no RCRIS LQG sites located within a 0.25-mile radius of the subject Site.

RCRA Small Generators of Hazardous Waste (RCRIS SQG)

There are twelve (12) RCRIS SQG sites located within a 0.25-mile radius of the subject Site. None of these twelve (12) RCRIS SQG sites are located on the Site, on the adjacent properties, hydraulically up-gradient of the Site or listed as RCRA violators. The off-site generation of hazardous waste alone does not present an environmental concern to the Site. Therefore, these twelve (12) RCRIS SQG sites are not likely to environmentally impact the Site.

Emergency Response Notification System of Spills (ERNS)

There is one (1) ERNS sites located within a 0.125-mile radius of the subject Site. This one (1) ERNS site is not located on the Site, on the adjacent properties or

hydraulically up-gradient of the Site. Therefore, this one (1) ERNS site is not likely environmentally impact the Site.

For more information regarding the above mentioned sites, please refer to the EDR Report (Appendix E).

9.0 CONCLUSIONS AND RECOMMENDATIONS

G. C. Environmental, Inc. (GCE) has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-00 of the Site. This assessment has revealed no evidence of recognized environmental conditions in connection with the Site, except for the following:

- According to Mr. Suydam and based on GCE's visual inspection, the Property is utilized for storage of construction equipment and construction maintenance vehicles throughout the Property by off-site tenants. During the site-inspection there were approximately ten (10) trucks and four (4) automobiles parked on the Property. No leaks and/or spills associated with these vehicles were observed. However, the usage of the Property as a parking area may have environmentally impacted the Site.

- The 1910 Sanborn Fire Insurance map shows the Site as vacant land and the Property as developed with a historical building located on the central portion of the Property labeled Century Rubber Trading Co. According to the CPBD records, Century Rubber Trading Co. occupied the building from 1904 to 1924. According to the CPBD records, Samoset Laundry Service Inc. occupied the building on the Property from 1931 to 1971. The 1982 Sanborn Fire Insurance map show the Site as a parking lot and the portion of the portion of the Property as developed with the historical building labeled as Samoset Laundry Inc. According to the CPBD records, the historical building was occupied by First Avenue Cleaners in 1982. Historical industrial and commercial usages of the Property may have environmentally impacted the Site.

- According to the EDR report, the Property is listed as a SHWS site:

  Samoset Laundry
  902 North Avenue
  Plainfield City, NJ
  This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as "pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

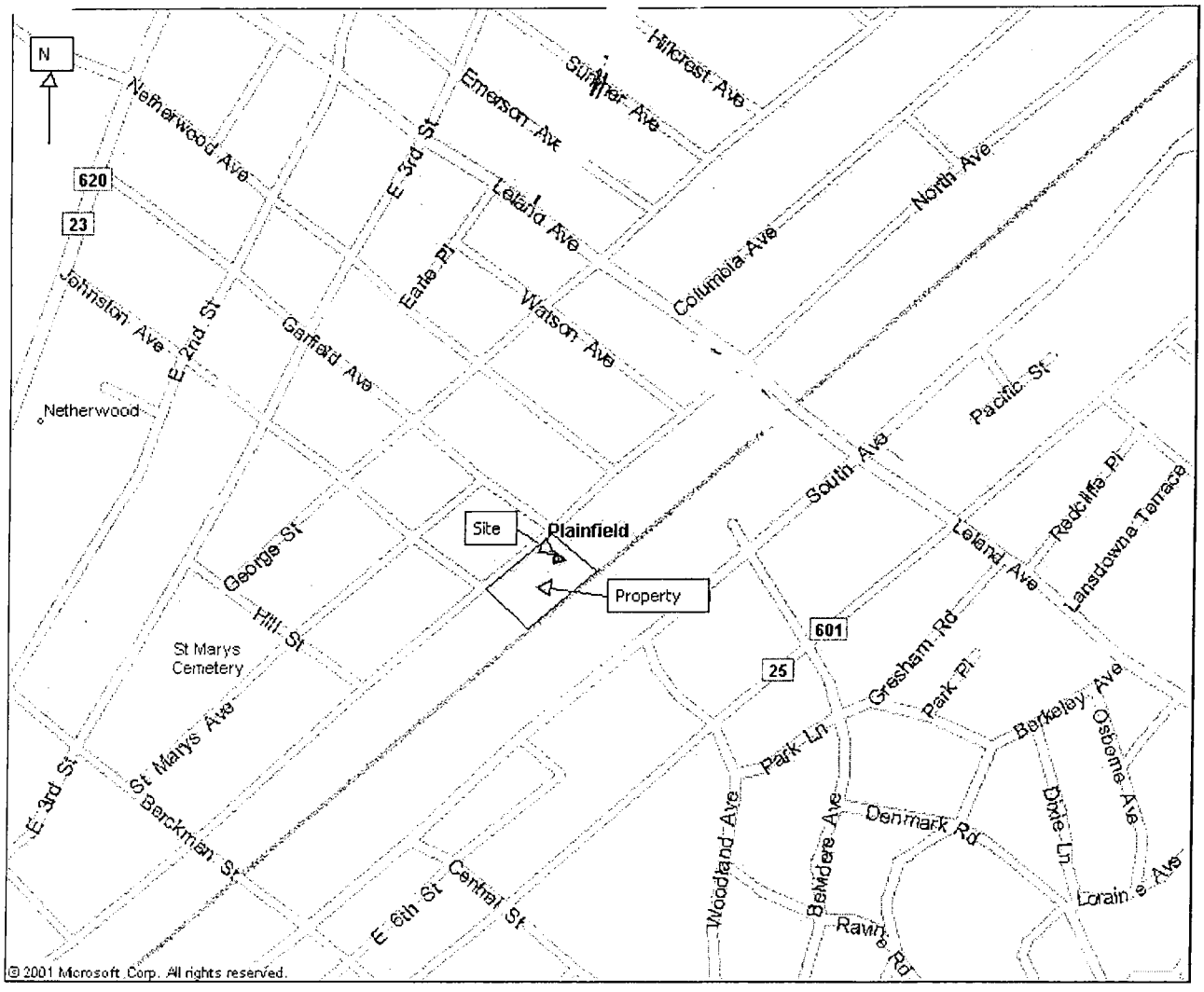
Based on the above findings, the following recommendation is made:

- A Limited Phase II Environmental Site Assessment should be performed in order to determine if potential and confirmed releases of petroleum products and/or hazardous materials associated with current and/or historical usages of the Property have environmentally impacted the Site.

According to the Federal Emergency Management Agency Flood Insurance Rate Map Index for the City of Plainfield, Union County, New Jersey, Community Panel No. 345312 0001D effective date July 16, 1997, the Site is located in an area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined (Zone AO).

Although it is not a recognized environmental condition, the engineering considerations should be made with respect to the Site's location within an area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined (Zone AO).

Since soil or groundwater testing was not performed as part of this assessment, GCE makes no direct representation of soil or groundwater quality conditions.



NOTE: DRAWING NOT TO SCALE. ALL LOCATIONS ARE APPROXIMATE. DRAWING INTENDED FOR USE WITH THIS GCE PHASE I ESA REPORT ONLY.

G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

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Fax: (914) 674-4348

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROPOSED T-MOBILE ANTENNA SITE

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NEW JERSEY 07062

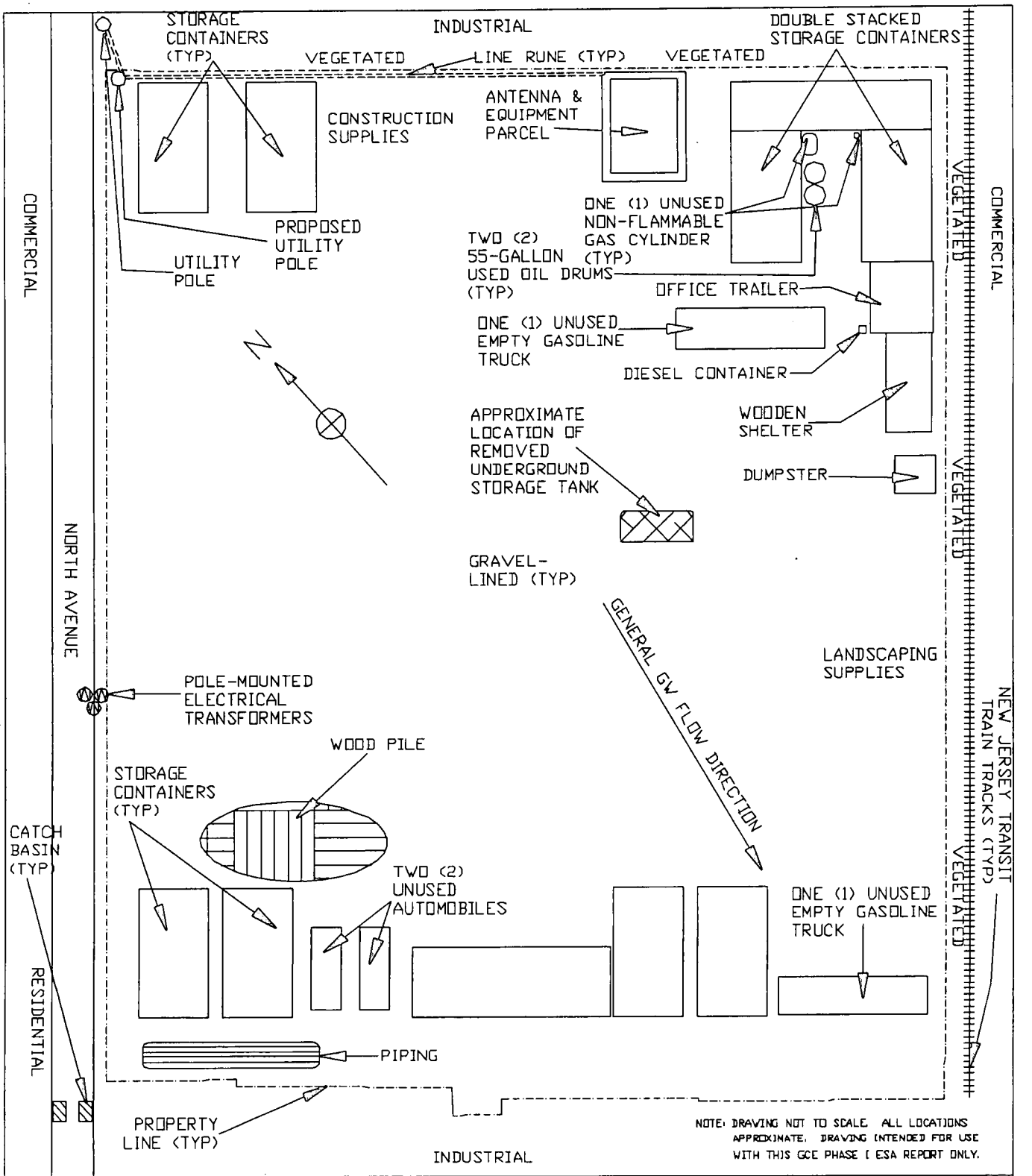
T-MOBILE SITE NO. NJ06560B

GCE PROJECT NO. 04-078-00

DWG. TITLE:

FIGURE 1

SITE LOCUS MAP



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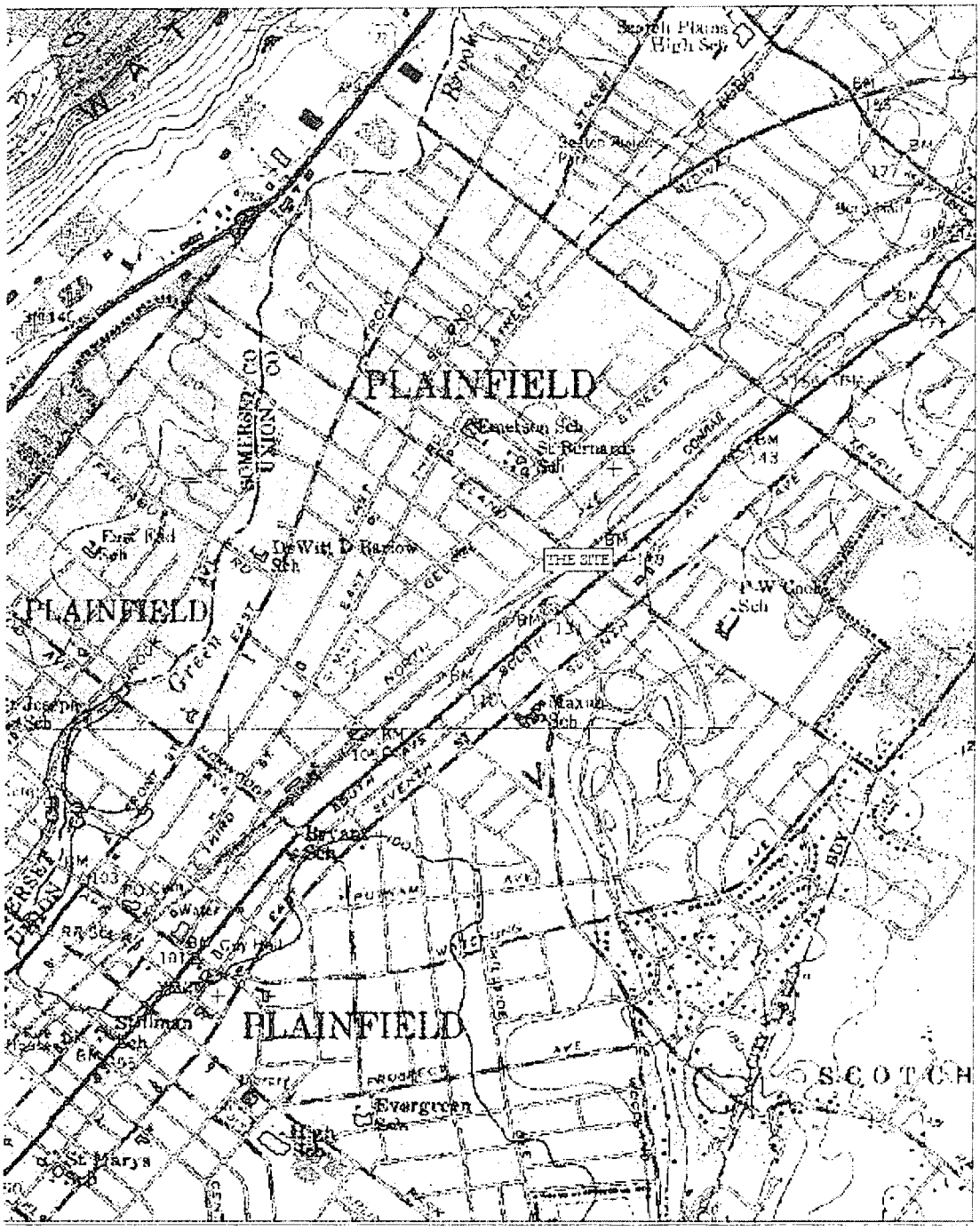
DWG. TITLE:

FIGURE 2

SITE PLAN



CHATHAM, NEW JERSEY
7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
USGS 1955, PHOTOREVISED 1981

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GCE PROJECT NO: 04-078-00

DWG. TITLE:

FIGURE 3
USGS TOPOGRAPHIC MAP

LIMITATIONS AND SERVICE CONSTRAINTS

Limitations

The findings set forth in the attached environmental site assessment report are strictly limited in time and scope to the date of the evaluation(s). The conclusions presented in the report are based on the services described in the report, and not on scientific tasks or procedures beyond the scope of work agreed in the purchase order/work order prior to the initialization of this assessment or the time and budgeting restraints imposed by the client.

This report may contain recommendations which are partially based on the analysis of data accumulated at the time and locations set forth in the report through the subsurface investigation. However, environmental, geological, and geotechnical conditions can vary from those encountered during this investigation, and that the limitation on available data results in some level of uncertainty with respect to the interpretation of these conditions, despite the use of standard professional care and skill. Therefore, further investigations may reveal additional data or variations of the current data which may require the enclosed recommendations to be reevaluated.

Chemical analyses may have been performed for specific parameters during the course of this assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the subject site.

Partial findings of this assessment are based on data provided by others. No warranty is expressed or implied with the usage of such data.

Because of these limitations, full and complete determination as to whether a certain piece of land is or is not free from environmental contamination cannot be made. The extent of testing and statistical confidence associated with an environmental site assessment is balanced against a reasonable project budget; therefore, 100 percent confidence in environmental site assessment conclusions can never be reached. Therefore, G. C. Environmental, Inc. does not provide guarantees, certifications, or warranties that a property is free from environmental contamination.

Service Constraints

Much of the information provided in this report is based upon personal interviews and research of all practically reviewable documents, records, and maps held by appropriate government and private agencies. This is subject to limitations of historical documentation, availability, and accuracy of pertinent records and the personal recollection of those persons contacted.

The initial site-investigation took into account the natural and man-made features of the subject site, including any unusual or suspect phenomenon. These factors, combined with the subject site's geology, hydrology, topography, and past and present land uses served as a basis for choosing a methodology and location for subsurface investigation as well as soil and/or groundwater sampling, if conducted. The analytical results of the subsurface investigation, if provided, are meant as a representative overview of the subject site's conditions.

The locations and type of analyses of soil and /or groundwater samples, if provided, were chosen based on the same considerations listed in the paragraphs above. If samples were analyzed, they were analyzed for those parameters unique to the subject site as determined during the preceding site-evaluation.

The presence of radioactive materials or wastes, biological hazards, asbestos or lead-based paint was not investigated unless specifically noted otherwise.

This report was prepared for the exclusive use of the client and/or the parties listed on the cover of the report, and is intended for the use listed in a proposal/work order or a Consulting Services Agreement signed prior to initiation of the assessment. The use of this report by any other parties or in any other manner than that listed in a proposal/work order or a Consulting Services Agreement signed prior to initiation of the assessment requires the written consent of G. C. Environmental, Inc. This report must be presented in its entirety.

APPENDIX B

SITE INFORMATION SUMMARY

Current Owner:	Phil Suydam 32 North Avenue Fanwood, New Jersey 07023
Site Location:	908 North Avenue Plainfield, New Jersey 07062
County:	Union
Tax Map Designation:	Block 344, part of Lot 1
Total Plot Area:	600-square-feet
Year Built:	Circa 1907
Zoning Information:	Light Industrial District, designated as "LI".
Date Local Zoning Established:	n/a
Site Contact:	Mr. Phil Suydam
Telephone:	(908) 578-2102
Date On-site Investigation Conducted:	April 29, 2004
Weather at Time of Investigation:	66 degrees and sunny

APPENDIX C

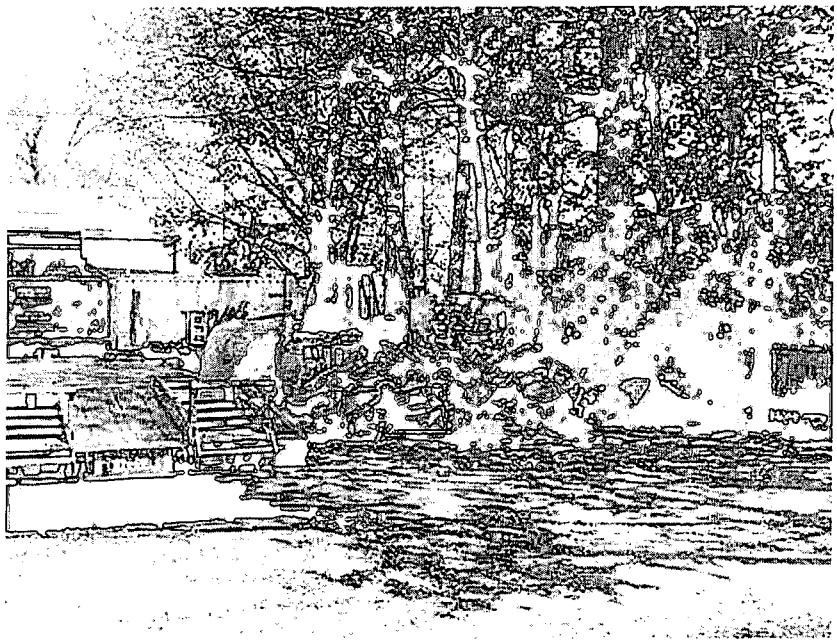
INFORMATION SOURCES

1. Persons/Offices Contacted Regarding the Site:

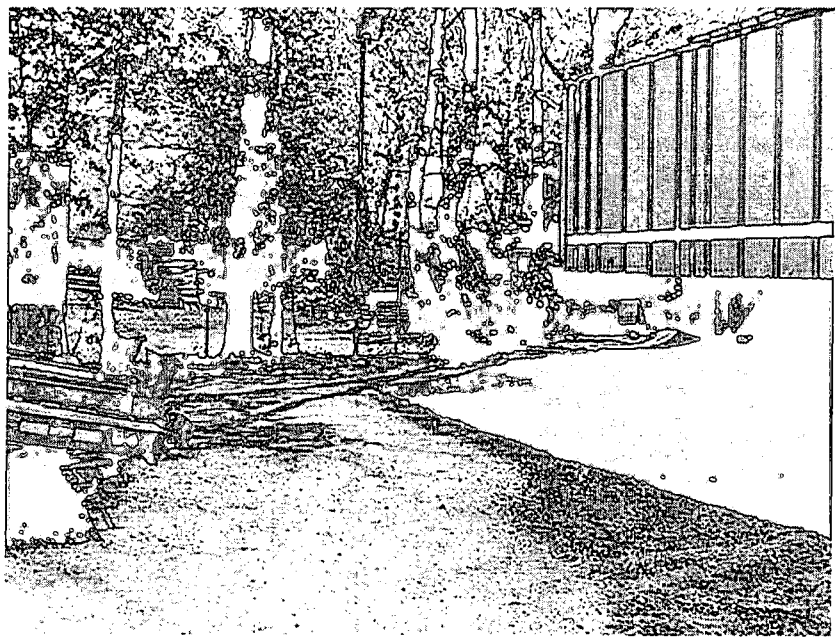
   - Mr. Phil Suydam, the Property owner
   - City of Plainfield Building Department, Plainfield, NJ
   - City of Plainfield Tax Assessor's Office, Plainfield, NJ
   - City of Plainfield Health Department, Plainfield, NJ
   - Environmental Data Resources, Inc. (EDR), Southport, CT

2. Reports, Plans and Other Documents Reviewed

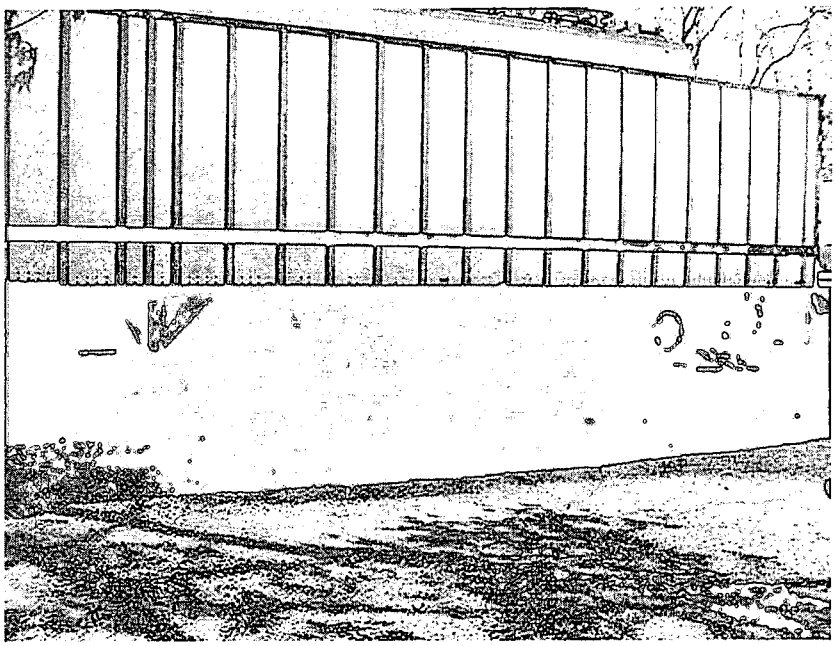
   - City of Plainfield Tax Assessor's Files, Plainfield, NJ
   - City of Plainfield Health Department Files, Plainfield, NJ
   - City of Plainfield Building Department Files, Plainfield, NJ
   - 1996 Bedrock Geologic Map of Northern New Jersey, prepared by the USGS and USDI.
   - 1998 Aquifers of New Jersey Map, prepared by the New Jersey Department of Environmental Protection (DEP)-Division of Science & Research, and the New Jersey Geologic Survey.
   - Topographic Map of Chatham, New Jersey Quadrangle, US Geological Survey (USGS), dated 1955, photorevised 1981.
   - State of New Jersey Department of Environmental Protection Freshwater Wetlands Map for Chatham Southeast, New Jersey Quadrangle, 1986.
   - U.S. Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory Maps for Chatham, New Jersey Quadrangle, 1984.
   - Environmental Data Resources, Inc. (EDR) Report, dated April 29, 2004.
   - 1910, 1951, 1956, 1963, and 1982 Sanborn Fire Insurance Maps
   - 1954, 1963, 1972, 1984 and 1995 aerial photographs.



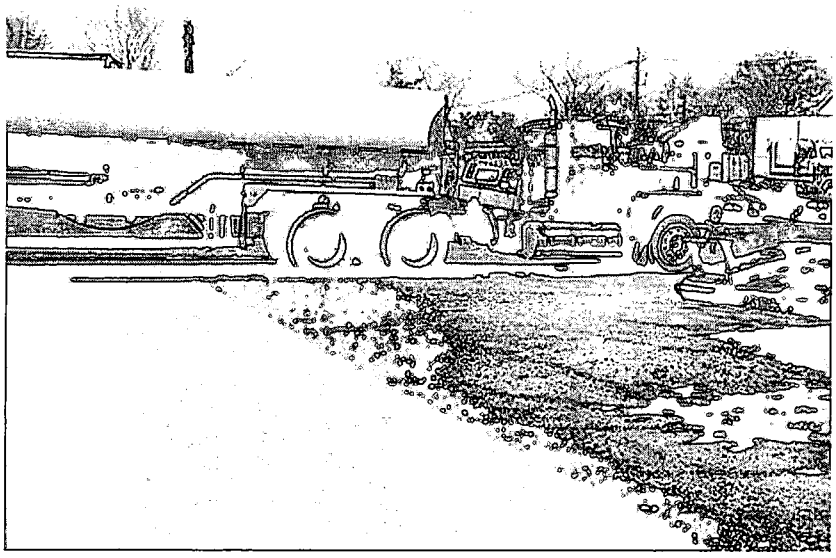
1. NORTH VIEW OF THE ANTENNA & EQUIPMENT PARCEL.



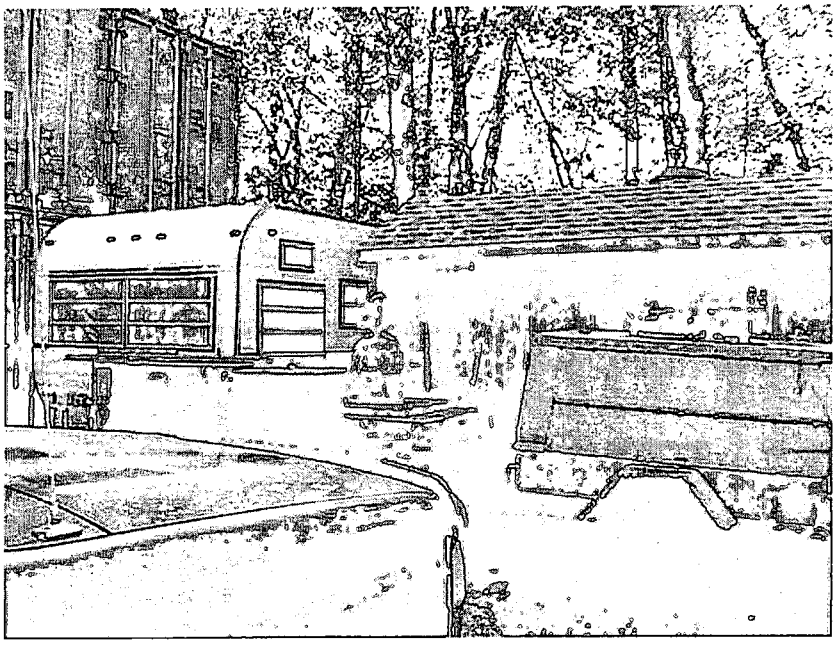
2. EAST VIEW OF THE ANTENNA & EQUIPMENT PARCEL.



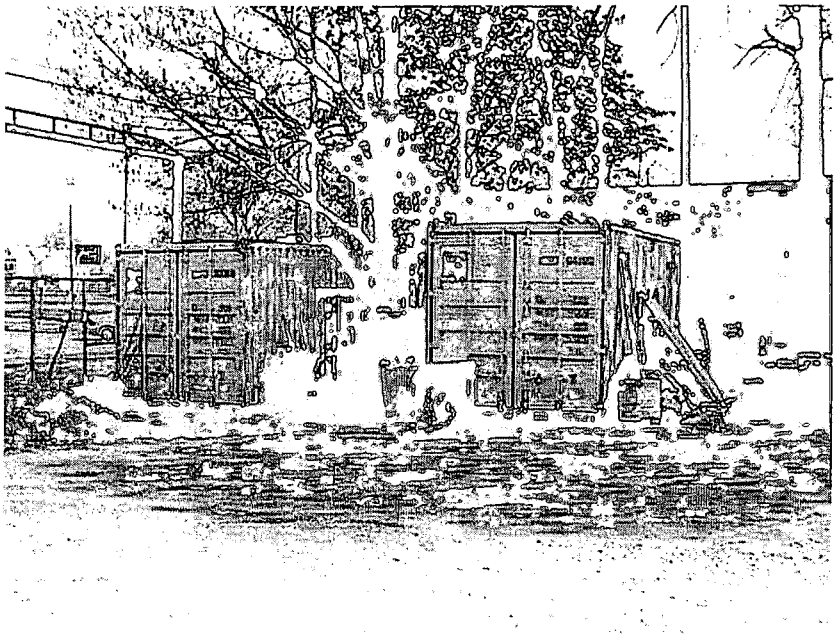
3. SOUTH VIEW OF THE ANTENNA & EQUIPMENT PARCEL.



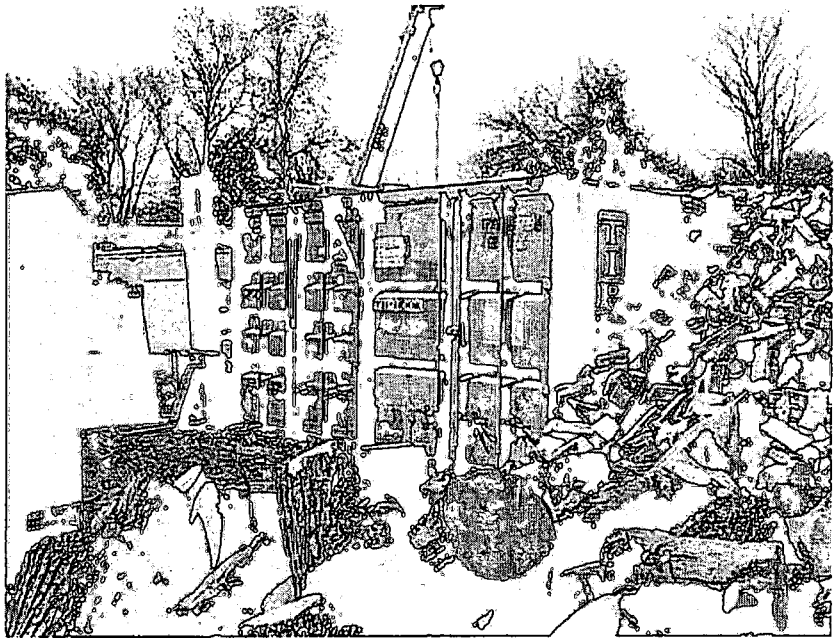
4. WEST VIEW OF THE ANTENNA & EQUIPMENT PARCEL.



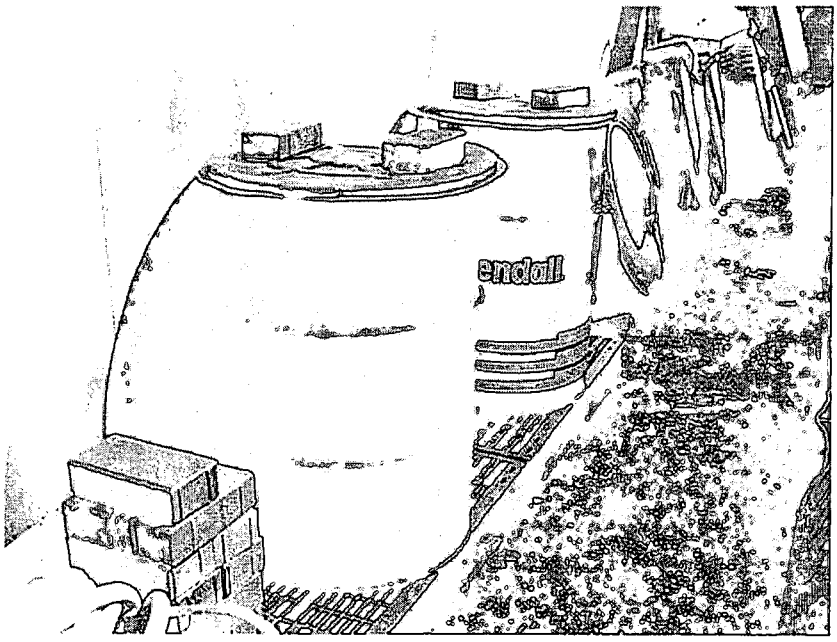
5. VIEW OF THE OFFICE TRAILER LOCATED ON THE NORTHEASTERN PORTION OF THE PROPERTY.



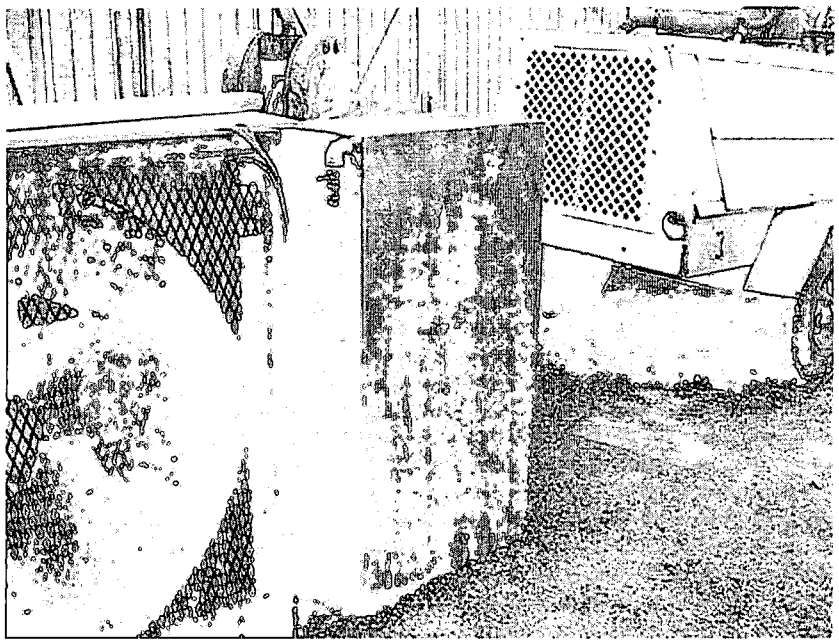
6. GENERAL VIEW OF THE STORAGE CONTAINERS THROUGHOUT THE PROPERTY.



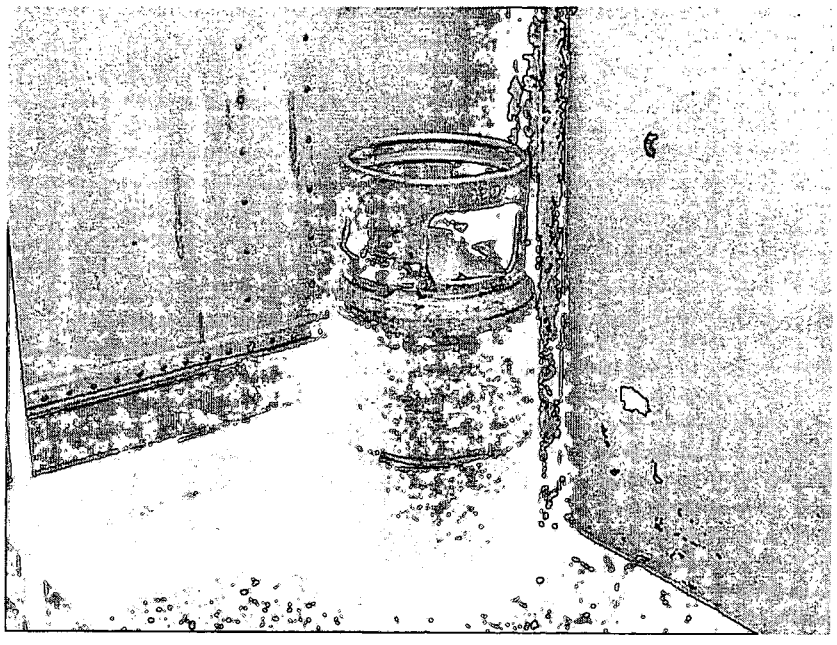
7. GENERAL VIEW OF THE STORAGE CONTAINERS AND THE WOODPILE LOCATED ON THE SOUTHERN PORTION OF THE PROPERTY.



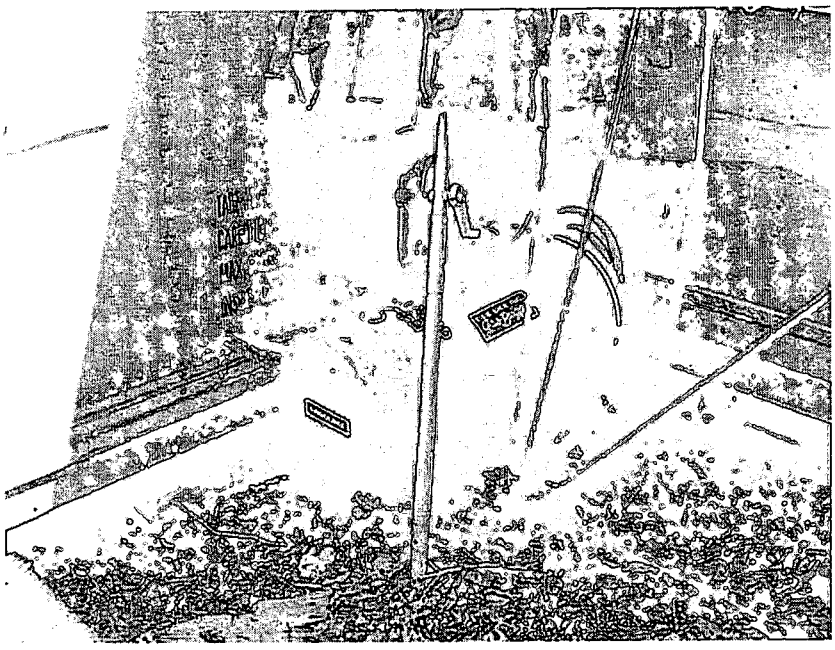
8. TWO 55-GALLON STEEL WASTE OIL DRUMS LOCATED ON THE NORTHEASTERN PORTION OF THE PROPERTY.



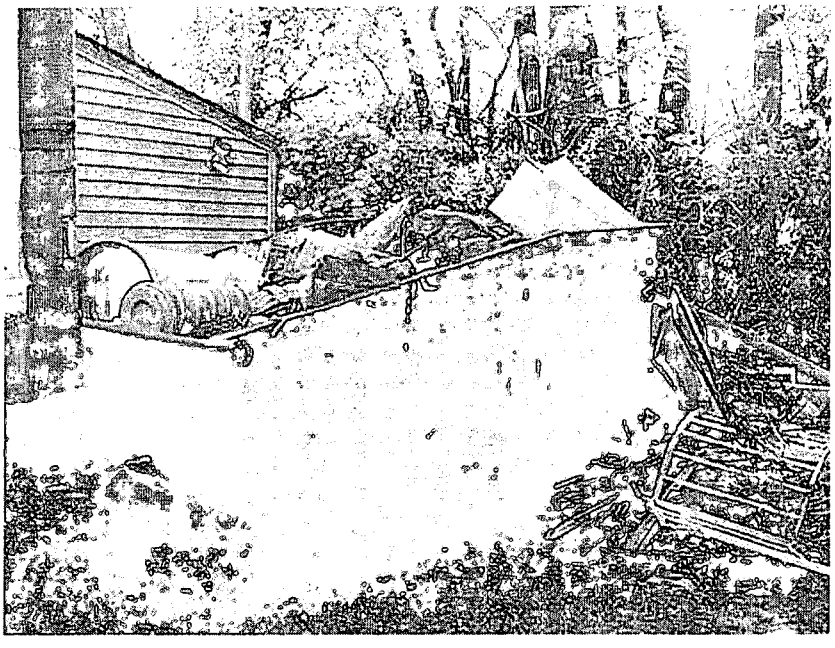
9. ONE (1) EMPTY DIESEL CONTAINER LOCATED ON THE NORTHEASTERN PORTION OF THE PROPERTY.



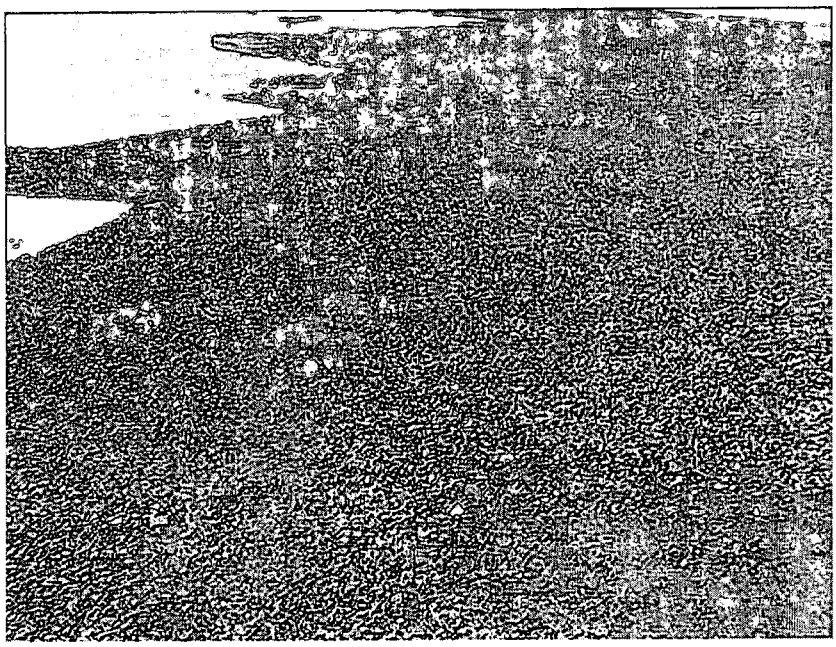
10. ONE (1) EMPTY NON-FLAMMABLE GAS CYLLINDER LOCATED ON THE NORTHEASTERN PORTION OF THE PROPERTY.



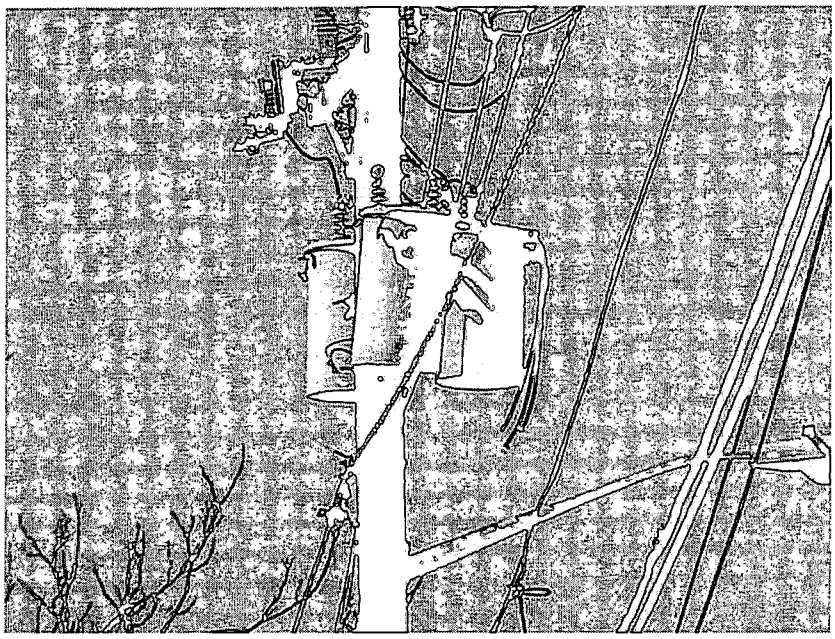
11. ONE (1) EMPTY NON-FLAMMABLE GAS CYLINDER LOCATED ON THE NORTHEASTERN PORTION OF THE PROPERTY.



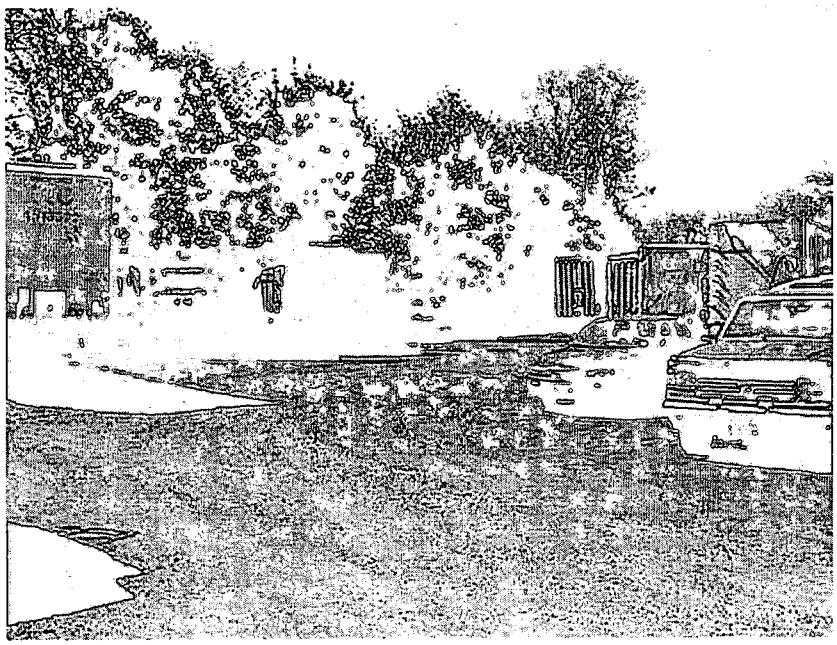
12. VIEW OF THE DUMPSTER LOCATED ON THE EASTERN PORTION OF THE PROPERTY.



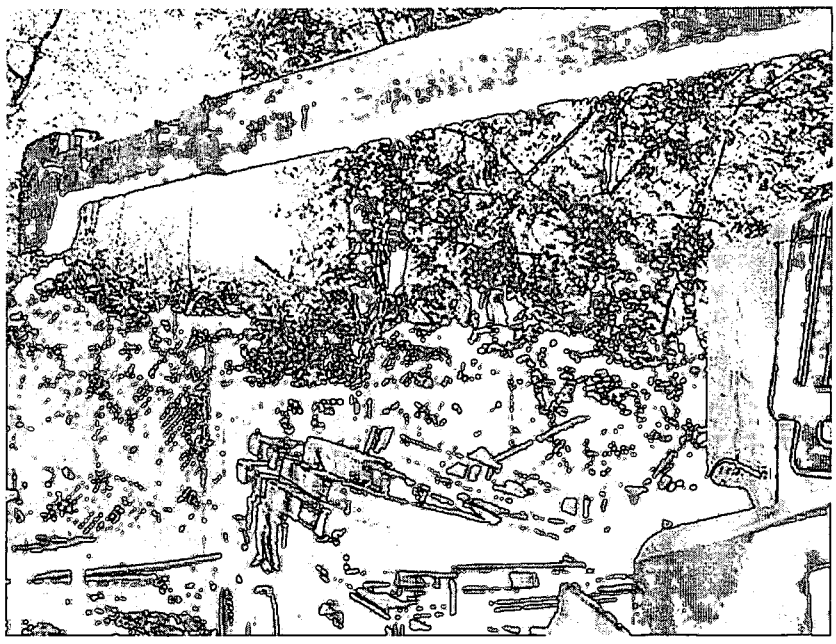
13. APPROXIMATE LOCATION OF THE ONE (1) REMOVED UNDERGROUND STORAGE TANK.



14. POLE-MOUNTED ELECTRICAL TRANSFORMERS LOCATED ON THE EAST SIDE OF NORTH STREET.



15. GENERAL VIEW OF THE CENTRAL PORTION OF THE PROPERTY.



16. VIEW OF THE VEGETATED LAND BETWEEN THE PROPERTY AND N.J. TRANSIT.

The EDR Radius Map™ Report

S Ave/Rt 23 Plainfield
908 North Avenue
Plainfield, NJ 07062

Inquiry Number: 1182140.4s

April 29, 2004

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-BRA

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

908 NORTH AVENUE
PLAINFIELD, NJ 07062

COORDINATES

Latitude (North):	40.628700 - 40° 37' 43.3"
Longitude (West):	74.405200 - 74° 24' 18.7"
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	550304.8
UTM Y (Meters):	4497499.5
State Plane X (Feet):	2072577.2
State Plane Y (Feet):	654076.4
Elevation:	116 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	40074-F4 CHATHAM, NJ
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned
CORRACTS ..... Corrective Action Report
RCRIS-TSD ..... Resource Conservation and Recovery Information System
RCRIS-LQG ..... Resource Conservation and Recovery Information System

STATE ASTM STANDARD

SWF/LF ..... Solid Waste Facility Directory

EXECUTIVE SUMMARY

FEDERAL ASTM SUPPLEMENTAL

DOD..... Department of Defense Sites
INDIAN RESERV..... Indian Reservations
FUDS..... Formerly Used Defense Sites
US BROWNFIELDS..... A Listing of Brownfields Sites
SSTS..... Section 7 Tracking Systems

STATE OR LOCAL ASTM SUPPLEMENTAL

NJ MAJOR FACILITIES..... List of Major Facilities
NJPDES..... New Jersey Pollutant Discharge Elimination System Dischargers

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites
AUL..... Sites With Closed Case(s) With Restrictions

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 02/26/2004 has revealed that there is 1 CERCLIS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
HALLER TESTING LABORATORIES	***336 LELAND AVE***	***1/4 - 1/2 NNW***	***AB125***	***195***

RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs): generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs): generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs): generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRIS-SQG list, as provided by EDR, and dated 03/09/2004 has revealed that there are 12 RCRIS-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
PLAINFIELD LAUNDRY INC	1011 SOUTH AVE	0 - 1/8 SE	B14	23
COURYS AUTO BODY SHOP	949 SOUTH AVE	0 - 1/8 S	D19	28
SUNOCO SERVICE STATION	SOUTH & BELVIDERE AVE	1/8 - 1/4 E	H31	41
UNION COUNTY VOLKSWAGEN	***1124 SOUTH AVE***	***1/8 - 1/4 E***	***I43***	***60***
DANNYS GULF - FORMER	1147 SOUTH AVE	1/8 - 1/4 ENE	K53	82

Lower Elevation	Address	Dist / Dir	Map ID	Page
C PETRO LEASING CORP	***1000 NORTH AVE***	***0 - 1/8 NNW***	***1***	***5***
917 NORTH AVENUE	917 NORTH AVE	0 - 1/8 WSW	A2	5
ARROW TRUCK SALES	***901 NORTH AVE***	***0 - 1/8 WSW***	***A5***	***8***
SFM CORPORATION HOWELL ELECTRI	***900 NORTH AVE***	***0 - 1/8 WSW***	***A6***	***11***
CLEMS ORNA IRON WKS INC	929 SOUTH AVE	0 - 1/8 S	D22	32
MAXSON MIDDLE SCHOOL	***920 E 7TH ST***	***1/8 - 1/4 SSE***	***L57***	***84***
CARFAROS TOTAL COLLISON CENTER	803D SOUTH AVENUE	1/8 - 1/4 SSW	O67	101

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 12/31/2003 has revealed that there is 1 ERNS site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
879 NORTH AVENUE	879 NORTH AVENUE	0 - 1/8 WSW	16	25

STATE ASTM STANDARD

SHWS: Known contaminated sites in New Jersey except those associated with Bureau of Underground Storage Sites (BUST)

A review of the SHWS list, as provided by EDR, has revealed that there are 21 SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NETHERWOOD AUTO REPAIR CENTER	***1000 SOUTH AVE***	***0 - 1/8 SE***	***B11***	***18***
SUNOCO SERVICE STATION PLAINFI	SOUTH / BELVIDERE AVE	1/8 - 1/4 E	H40	53
UNION COUNTY VOLKSWAGEN	***1124 SOUTH AVE***	***1/8 - 1/4 E***	***I43***	***60***
THOMAS D COLAVITO INCORPORATED	***1128 NORTH AVE***	***1/8 - 1/4 NE***	***46***	***69***

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
DANNYS GULF INC	***1147 SOUTH AVE***	***1/8 - 1/4 ENE***	***K52***	***79***
US ARMY ARMORY PLAINFIELD CITY	1201 7TH ST E	1/4 - 1/2 E	S89	139
1227 FRONT ST E	1227 FRONT ST E	1/2 - 1 NNW	159	245
1055 SLEEPY HOLLOW LN	1055 SLEEPY HOLLOW LN	1/2 - 1 SE	160	246
MCCREA REALTY	TERRILL RD / EAST 3RD	1/2 - 1 NNE	161	246
GRAPHIC RESEARCH	***32 SOUTH AVE***	***1/2 - 1 NE***	***162***	***246***
INDUSTRIAL MICROWAVE CORPORATI	514 TO 520 MARTIN PL	1/2 - 1 NNE	163	248
EXXON SERVICE STATION PLAINFIE	1472 EAST FRONT ST	1/2 - 1 N	164	249
17 WATSON RD	17 WATSON RD	1/2 - 1 NE	165	249

Lower Elevation	Address	Dist / Dir	Map ID	Page
SAMOSET LAUNDRY	902 NORTH AVE	0 - 1/8 WSW	A4	7
912 SOUTH AVENUE	912 SOUTH AVE	1/8 - 1/4 S	F27	35
INPLANT CORPORATION	324 TO 330 LELAND AVE	1/8 - 1/4 NNE	54	82
1006 EAST 2ND STREET	1006 EAST 2ND ST	1/4 - 1/2 NW	V100	158
CENTURY SPORTS	***403 BERCKMAN ST***	***1/4 - 1/2 SW***	***AA121***	***188***
HALLER TESTING LABORATORIES	***336 LELAND AVE***	***1/4 - 1/2 NNW***	***AB125***	***195***
ROYAL APEX MANUFACTURING CO IN	***639 SOUTH AVE***	***1/4 - 1/2 SW***	***AH147***	***227***
D&R RADIATORS UNLIMITED	***600 SOUTH AVE***	***1/2 - 1 SW***	***158***	***244***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Protection & Energy's Incident Report.

A review of the LUST list, as provided by EDR, and dated 09/17/2002 has revealed that there are 29 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NETHERWOOD AUTO REPAIR CENTER	***1000 SOUTH AVE***	***0 - 1/8 SE***	***B11***	***18***
TD COLAVITO DISPOSAL	1128 N AVE	1/8 - 1/4 NE	E23	32
SUNOCO S/S #0006-8981 (PLAINFI	1100 S AVE	1/8 - 1/4 E	H30	41
BURGER KING	***1200 SOUTH AVE***	***1/4 - 1/2 ENE***	***P73***	***110***
G O KELLER INC	***1201-11 SOUTH AVE***	***1/4 - 1/2 ENE***	***P74***	***113***
AMERICAN CODING & MARKING INK	***1220 NORTH AVE***	***1/4 - 1/2 NE***	***75***	***114***
FANWOOD DISPOSAL INC	***1232 NORTH AVE***	***1/4 - 1/2 NE***	***80***	***122***
US ARMORY PLAINFIELD CITY;OMS	1201 EAST 7TH STREET	1/4 - 1/2 E	S92	145
HERITAGE INTERNATIONAL TIME	***1280 NORTH AVE***	***1/4 - 1/2 NE***	***AD135***	***208***
LINDA MILLER	616 BERKELEY AVE	1/4 - 1/2 SSE	AE141	217
FRED W. COOK SCHOOLS	***739 LELAND AVE***	***1/4 - 1/2 E***	***AI149***	***228***

Lower Elevation	Address	Dist / Dir	Map ID	Page
C PETRO LEASING CORP	***1000 NORTH AVE***	***0 - 1/8 NNW***	***1***	***5***
SFM CORPORATION HOWELL ELECTRI	***900 NORTH AVE***	***0 - 1/8 WSW***	***A6***	***11***
CARFARA 1985 LTDLP	929 TO 35 AVE S	1/8 - 1/4 SSW	F24	33
THOMAS COLAVITO INCORPORATED	1128 NORTH AVE	1/8 - 1/4 NE	E37	50
RESIDENTIAL BUILDING	***915 GEORGE ST***	***1/8 - 1/4 WNW***	***47***	***70***
MAXSON MIDDLE SCHOOL	920 E 7TH AVE	1/8 - 1/4 SSE	L56	84
FURINO & SON INC	***767 NORTH AVE***	***1/4 - 1/2 SW***	***71***	***106***
QUEEN CITY FUEL OIL CO	***717 NORTH AVE***	***1/4 - 1/2 SW***	***U98***	***155***
GUY DUNN AUTO REPAIR SHOP	1006 2ND ST E	1/4 - 1/2 NW	V102	160
CHARLES MCCUTCHEN	350 LELAND AVE	1/4 - 1/2 NNW	X115	179
CENTURY SPORTS	***403 BERKMAN DR***	***1/4 - 1/2 SW***	***AA120***	***186***

Lower Elevation	Address	Dist / Dir	Map ID	Page
INPLANT	*324 TO 330 LELAND AVE*	*1/4 - 1/2 NNW*	*AB130*	*202*
CAPITAL CONTRACTING	*400 BERKMAN*	*1/4 - 1/2 SW*	*131*	*202*
EMERSON SCHOOL	*305 EMERSON AVE*	*1/4 - 1/2 N*	*AC133*	*206*
ROYAL APEX MANUFACTURING COMPA	639 SOUTH AVE	1/4 - 1/2 SW	AH148	228
BARLOW SCHOOL	*EAST FRONT ST & FARRAGU*	*1/4 - 1/2 W*	*153*	*238*
ECKNER'S GARAGE INC	*620 SOUTH AVE*	*1/4 - 1/2 SW*	*AJ156*	*243*
TRUCK TECH INC	*615 NORTH AVE*	*1/4 - 1/2 SW*	*157*	*244*

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection & Energy's UST Data.

A review of the UST list, as provided by EDR, and dated 02/19/2004 has revealed that there are 14 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NETHERWOOD AUTO REPAIR CENTER	*1000 SOUTH AVE*	*0 - 1/8 SE*	*B11*	*18*
GETTY 56293	1100 SOUTH & BELVIDERE	1/8 - 1/4 E	H32	42
UNION COUNTY VOLKSWAGEN	*1124 SOUTH AVE*	*1/8 - 1/4 E*	*I43*	*60*
DANNYS GULF INC	*1147 SOUTH AVE*	*1/8 - 1/4 ENE*	*K52*	*79*

Lower Elevation	Address	Dist / Dir	Map ID	Page
C PETRO LEASING CORP	*1000 NORTH AVE*	*0 - 1/8 NNW*	*1*	*5*
SFM CORPORATION HOWELL ELECTRI	*900 NORTH AVE*	*0 - 1/8 WSW*	*A6*	*11*
PAPETTI HYGRADE EGG PRODUCTS I	900 NORTH AVE	0 - 1/8 WSW	A7	12
BOYNTON OIL	903 N AVE	0 - 1/8 WSW	A9	16
KLEMS ORNAMENTAL IRON WORKS	929-35 S AVE	1/8 - 1/4 SSW	F25	33
PAPETTI HYGRADE EGG PROD INC	847 NORTH AVE	1/8 - 1/4 WSW	G29	41
THOMAS D COLAVITO INC	1128 NORTH AVE	1/8 - 1/4 NE	E38	51
RESIDENTIAL BUILDING	*915 GEORGE ST*	*1/8 - 1/4 WNW*	*47*	*70*
MAXSON MIDDLE SCHOOL	*920 E 7TH ST*	*1/8 - 1/4 SSE*	*L57*	*84*
TIERRO & SONS INC	1200 NORTH AVE	1/8 - 1/4 NE	62	93

STATE OR LOCAL ASTM SUPPLEMENTAL

NJ SPILLS: All hazmat known or unknown spills to the ground reported to the DEP's Env. Action Line. The office has not conducted any investigations to determine it's validity or accuracy.

A review of the NJ Spills list, as provided by EDR, has revealed that there are 107 NJ Spills sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NETHERWOOD AUTO REPAIR CTR	1000 SOUTH AVE	0 - 1/8 SE	B10	16
INTERSECTION OF	SOUTH AVE/WOODLAND AVE	0 - 1/8 SE	B12	19
VILLAGE PLAZA	1004 -1014 SOUTH AVE	0 - 1/8 SE	B13	20
ON ROADWAY IN FRONT OF	1022 SOUTH AVE	0 - 1/8 SE	B15	24
NETHERWOOD TRAIN STATION	1035 SOUTH AVE	0 - 1/8 ESE	C17	25
IN FRONT OF	1041 SOUTH AVE	0 - 1/8 ESE	C18	27
IN AREA OF	1000 BLOCK SOUTH AVE	0 - 1/8 SE	C20	29
SUNOCO SERVICE STAT.00068981	1100 SOUTH AVE	1/8 - 1/4 E	H33	43

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
IN FRONT OF	1105 SOUTH AVE	1/8 - 1/4 E	H34	46
STORE FACILITY	1118 SOUTH AVE	1/8 - 1/4 E	I42	54
ON ROADWAY NEAR	1136 SOUTH AVE	1/8 - 1/4 E	I48	71
INTERSECTION OF	EAST 7TH ST/WOODLAND A	1/8 - 1/4 SE	J49	73
RESIDENCE	1002 E. 7TH ST	1/8 - 1/4 SE	J50	75
DANNYS GULF INC	***1147 SOUTH AVE***	***1/8 - 1/4 ENE***	***K52***	***79***
AREA OF	BELVIDERE AV/E 7TH ST	1/8 - 1/4 ESE	M58	85
ROADWAY INTERSECTION OF	BELVIDERE/EAST 7TH ST	1/8 - 1/4 ESE	M59	86
AREA OF	E. 7TH /BELVIDERE	1/8 - 1/4 ESE	M60	88
INTERSECTION	BELVIDERE/ E. 7TH ST	1/8 - 1/4 ESE	M61	91
INTERSECTION OF	LELAND AV/GEORGE ST	1/8 - 1/4 N	N65	97
INTERSECTION AT	GEORGE ST/LELAND AVE	1/8 - 1/4 N	N66	100
AREA OF	SOUTH AVE / LELAND	1/4 - 1/2 ENE	P72	108
BURGER KING	***1200 SOUTH AVE***	***1/4 - 1/2 ENE***	***P73***	***110***
IN FRONT OF	518 LELAND AVE	1/4 - 1/2 ENE	P76	116
AREA OF	SOUTH / LELAND AVES	1/4 - 1/2 ENE	79	120
1 ST CHRISTIAN ASSEMBLY	718 CENTRAL	1/4 - 1/2 S	87	136
AT INTERSECTION OF	LEELAND AVE/E 7TH ST	1/4 - 1/2 E	S88	137
ON ROADWAY	E 7TH ST/ LELAND AVE	1/4 - 1/2 E	S90	139
PLAINFIELD OPR NJ NATL GUARD	1201 E. 7TH ST	1/4 - 1/2 E	S91	142
ON ROADWAY	LELAND/E 7TH ST	1/4 - 1/2 E	S93	145
US ARMY ARMORY	1201 E SEVENTH ST	1/4 - 1/2 E	S94	147
HOLY FAMILY CATHOLIC SCHOOL	368 SUMNER AVE	1/4 - 1/2 N	105	163
ROADWAY	1236 EAST 7TH ST.	1/4 - 1/2 E	Y117	182
JOHN HOLT RESIDENCE	1236 EAST 7TH ST	1/4 - 1/2 E	Y118	183
VACANT HOUSE	377 HILLCREST AVE	1/4 - 1/2 NNE	127	197
HERITAGE INTERNATIONAL	1280 NORTH AVE	1/4 - 1/2 NE	AD134	206
ON ROADSIDE	HARVEYS PL / GEORGE S	1/4 - 1/2 NNE	136	209
ON ROADWAY	350 FREDERICK ST	1/4 - 1/2 NE	139	213
IN FRONT OF RESIDENCE	740 BELVIDERE AV	1/4 - 1/2 SSE	AE140	214
ITALIAN VILLAGE	1304 SOUTH AVE	1/4 - 1/2 ENE	AG143	219
FRED W. COOK SCHOOLS	***739 LELAND AVE***	***1/4 - 1/2 E***	***AI149***	***228***
IN PARKING LOT	739 LELAND AVE	1/4 - 1/2 E	AI150	230
AREA OF	1316 SOUTH AVE	1/4 - 1/2 ENE	AG152	237
RESIDENCE	305 HILLCREST AVENUE	1/4 - 1/2 N	154	240

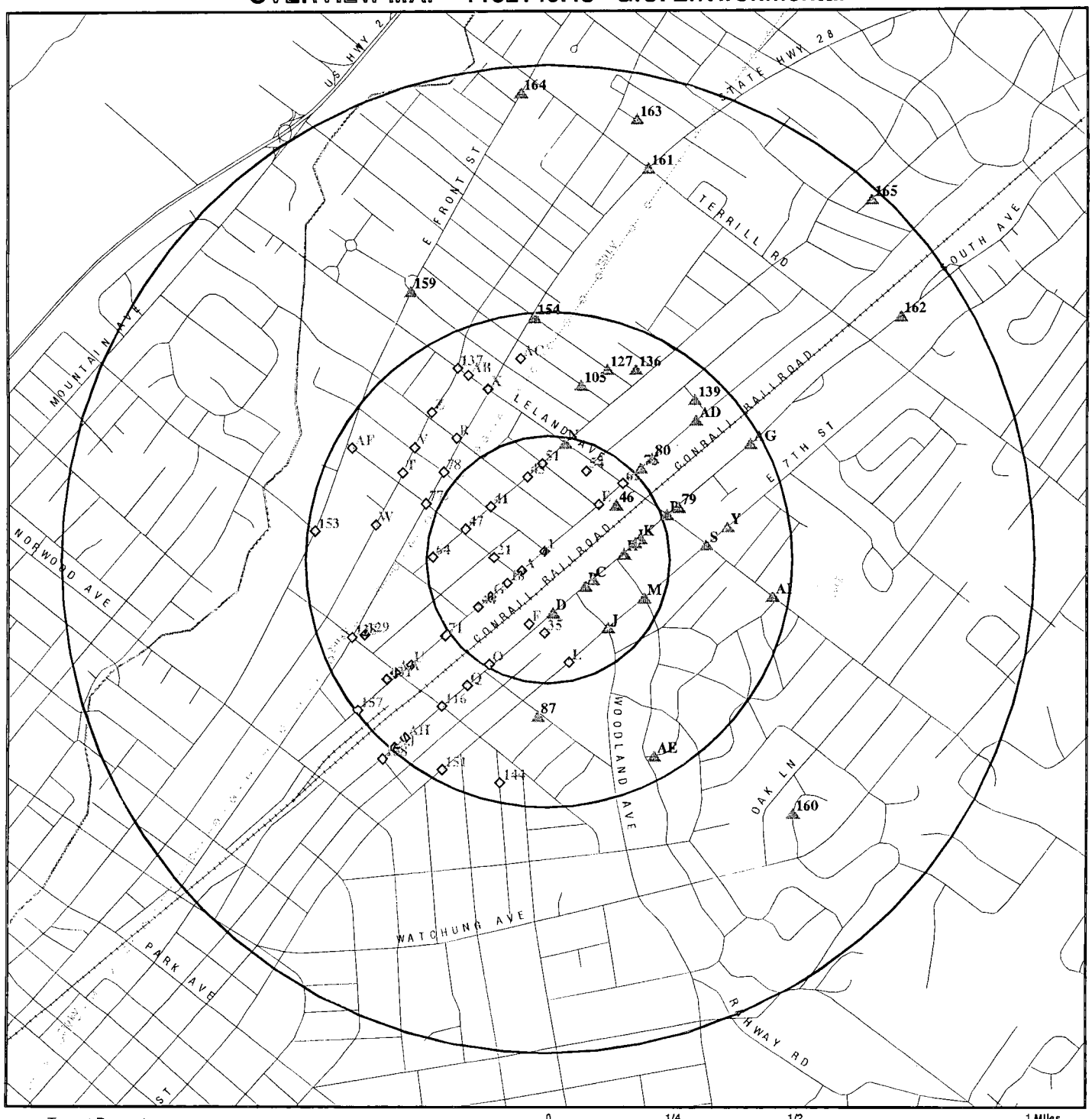
Lower Elevation	Address	Dist / Dir	Map ID	Page
JET PLASTICS	902 NORTH AVE	0 - 1/8 WSW	A3	6
ARROW TRUCK SALES	***901 NORTH AVE***	***0 - 1/8 WSW***	***A5***	***8***
PAPETTI FLEET MAINTENANCE	900 NORTH AVE	0 - 1/8 WSW	A8	13
RESIDENCE AT	337 JOHNSTON AVE	0 - 1/8 W	21	30
STRIP MALL	912 SOUTH AVE	1/8 - 1/4 S	F26	33
PAPETTIS EGG PRODUCTS	847 NORTH AV	1/8 - 1/4 WSW	G28	35
PLAINFIELD DPW	900 BLK OF SOUTH AVE	1/8 - 1/4 S	35	47
THOMAS COLAVITO INC	1128 NORTH AVE	1/8 - 1/4 NE	E36	49
T.D. COLAVITO DISPOSAL	1128 NORTH AVE	1/8 - 1/4 NE	E39	51
IN FRONT OF	1011 GEORGE ST	1/8 - 1/4 NW	41	53
ON ROADWAY	823 NORTH AVE	1/8 - 1/4 WSW	44	61
JUNE DENNIS RESIDENCE	1109 GEORGE ST	1/8 - 1/4 NNW	45	68
INTERSECTION OF	GEORGE ST/WATSON AV	1/8 - 1/4 N	51	76
MAXXON SCHOOL	920 EAST 7TH AVE	1/8 - 1/4 SSE	L55	82
RESIDENCE	909 EAST 7TH ST.	1/8 - 1/4 S	L63	94
IN FRONT OF	840 GEORGE ST	1/8 - 1/4 W	64	95
SUNOCO SER STATION	SOUTH / CENTRAL	1/4 - 1/2 SSW	O68	101
WESTFIELD RAILROAD STATION	CENTRAL / SOUTH	1/4 - 1/2 SSW	O69	103

Lower Elevation	Address	Dist / Dir	Map ID	Page
ON ROADWAY	SOUTH / CENTRAL	1/4 - 1/2 SSW	O70	104
FURINO & SON INC	***767 NORTH AVE***	***1/4 - 1/2 SW***	***71***	***106***
INTERSECTION	JOHNSON AVE / EAST 3RD	1/4 - 1/2 WNW	77	118
POLE TRANSFORMER/ROADWAY	GARFIELD AVE/E 3RD	1/4 - 1/2 NW	78	119
PLAINFIELD DPW GARAGE	745 SOUTH AVE	1/4 - 1/2 SSW	Q81	123
PLAINFIELD DPW	745 SOUTH AVE	1/4 - 1/2 SSW	Q82	128
INTERSECTION OF WEST FRONT +	ROCK AVE	1/4 - 1/2 SSW	Q83	130
POLE #61088 NEAR GEORGE AV +	278 NETHERWOOD AV	1/4 - 1/2 NW	R84	131
ROADWAY	E. 3 RD / NETHERWOOD	1/4 - 1/2 NW	R85	133
ROADWAY	E.3RD / NETHERWOOD	1/4 - 1/2 NW	R86	134
INTERSECTION OF	JOHNSTON AVE/EAST 2ND	1/4 - 1/2 WNW	T95	148
ON ROADWAY	E. 2ND ST/JOHNSON AVE	1/4 - 1/2 WNW	T96	151
IN FRONT OF	930 EAST 2ND ST	1/4 - 1/2 WNW	T97	153
IN AREA OF	E 2ND ST / GARFIELD	1/4 - 1/2 NW	V99	156
GUY DUNN AUTO REPAIR SHOP	1006 E 2ND ST	1/4 - 1/2 NW	V101	158
RESIDENCE	1009 E 2ND ST	1/4 - 1/2 NW	V103	160
Not reported	1007 E 2ND ST	1/4 - 1/2 NW	V104	162
FORMER GAS STATION CORNER OF	BECRKMAN ST+NORTH AV	1/4 - 1/2 SW	U106	165
INTERSECTION OF	BERKMAN ST NORTH AVE	1/4 - 1/2 SW	U107	166
AREA OF	804 EAST 2ND ST	1/4 - 1/2 WNW	W108	168
AREA OF	804 EAST 2ND ST	1/4 - 1/2 WNW	W109	169
COMMERCIAL COMPLEX	710 NORTH AVE	1/4 - 1/2 SW	U110	171
ON ROADWAY IN FRONT OF	710 NORTH AVE	1/4 - 1/2 SW	U111	172
BURTON MACHINE	710 NORTH AVE	1/4 - 1/2 SW	U112	174
ON ROADWAY	E 3RD ST/LELAND AVE	1/4 - 1/2 NNW	X113	175
AREA OF	NORTH / BERKMAN	1/4 - 1/2 SW	U114	177
INTERSECTION OF	BERCKMAN / SOUTH AVE	1/4 - 1/2 SW	116	179
INTERSECTION OF	NETHERWOOD/EAST 2ND ST	1/4 - 1/2 NW	Z119	185
CENTURY SPORTS	***403 BERKMAN DR***	***1/4 - 1/2 SW***	***AA120***	***186***
BYRAM LAB	1111 E 2ND ST	1/4 - 1/2 NW	Z122	189
WESTFIELD LUMBER CO	700 NORTH AVE	1/4 - 1/2 SW	AA123	190
INTERSECTION OF	BERKMAN / NORTH AVE	1/4 - 1/2 SW	AA124	192
SPECIALTY MAT CORP	332 LELAND AVE	1/4 - 1/2 NNW	AB126	196
INDUSTRIAL PROPERTY	326 LELAND AVE	1/4 - 1/2 NNW	AB128	199
ON ROADWAY	BERKMAN/E 3RD ST	1/4 - 1/2 WSW	129	200
CAPITAL CONTRACTING	***400 BERKMAN***	***1/4 - 1/2 SW***	***131***	***202***
EMERSON SCHOOL	305 EMERSON AVE	1/4 - 1/2 N	AC132	204
IN THE AREA OF	LELAND/E 2ND ST	1/4 - 1/2 NNW	137	210
ROADWAY	BERCKMAN ST / E 3RD	1/4 - 1/2 WSW	138	211
ON ROADWAY 900 BLOCK OF	EAST FRONT ST	1/4 - 1/2 WNW	AF142	218
RENTAL PROP/RESIDENCE	728 WEBSTER PLACE	1/4 - 1/2 SSW	144	222
IN FRONT OF	111 JOHNSON DR	1/4 - 1/2 WNW	AF145	224
ROYAL APEX MANF. CO.	639 SOUTH AVE	1/4 - 1/2 SW	AH146	225
AREA OF	631 E. 7TH ST	1/4 - 1/2 SSW	151	231
BARLOW SCHOOL	***EAST FRONT ST & FARRAGU***	***1/4 - 1/2 W***	***153***	***238***
ECKNERS GARAGE	620 SOUTH AVE	1/4 - 1/2 SW	AJ155	242

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
106 TO 108 RANDOLPH AVENUE STATION	SHWS
MOBIL SERVICE STATION PLAINFIELD C	SHWS
MOBIL SERVICE STATION PLAINFIELD C	SHWS
ELIZABETHTOWN WC NETHERWOOD WELLFI	SHWS
VIRKOTYPE CORPORATION	SHWS
ELIZABETHTOWN WC GREEN BROOK PARK	SHWS
TEPPERS THE GREEN AT PLAINFIELD	SHWS
1225 SOUTH AVE CORP	LUST
CITY OF PLAINFIELD PUBLIC WORKS GA	LUST
S SECOND ST REDEVELOPMENT 5	UST
AT INTERSECTION OF SUMNER AVE	NJ Spills
INTERSECTION OF CLINTON AVE	NJ Spills
ROCK AVE AND	NJ Spills
ON ROADWAY MADISON AVE	NJ Spills
INTERSECTION OF PARK AVE &	NJ Spills
INTERSECT CENTRAL AVE &	NJ Spills
INTERSECTION OF FIELD AVE &	NJ Spills
OFF PLAINFIELD AVE AT	NJ Spills
ON ROADWAY @ PLAINFIELD AV &	NJ Spills
INTERSECTION OF LELAND AVE &	NJ Spills
INTERSECTION OF PUTNAM AVE +	NJ Spills
INTERSECTION AT GRANT AVE &	NJ Spills
SIDEWALK WATCHUNG AVE	NJ Spills
INTERSECTION OF PLAINFIELD AV+	NJ Spills
PLAINFIELD SUB STATION	NJ Spills
PLAINFIELD SUB STATION	NJ Spills
ON ROADWAY PEMBERTON AVE &	NJ Spills
CENTRAL AVE AND	NJ Spills
INTERSECTION OF PARK AVE	NJ Spills
ALONG NORTH AVE FROM	NJ Spills
BEFORE WATCHUNG AVE ON	NJ Spills
GRANT AVE AND	NJ Spills
4TH+PLAINFIELD AVE TO W.4TH ST	NJ Spills
INTERSECTION OF GRAND AVE	NJ Spills
SOUTH AVE AT BELVEDERE	ERNS
BEHIND PLAINFIELD HIGHSCHOOL ON ES	ERNS
CLINTON AVE ON THE BORDER BETWEEN	ERNS
ERTON AVE AND OTHER ROADWAYS IN AR	ERNS

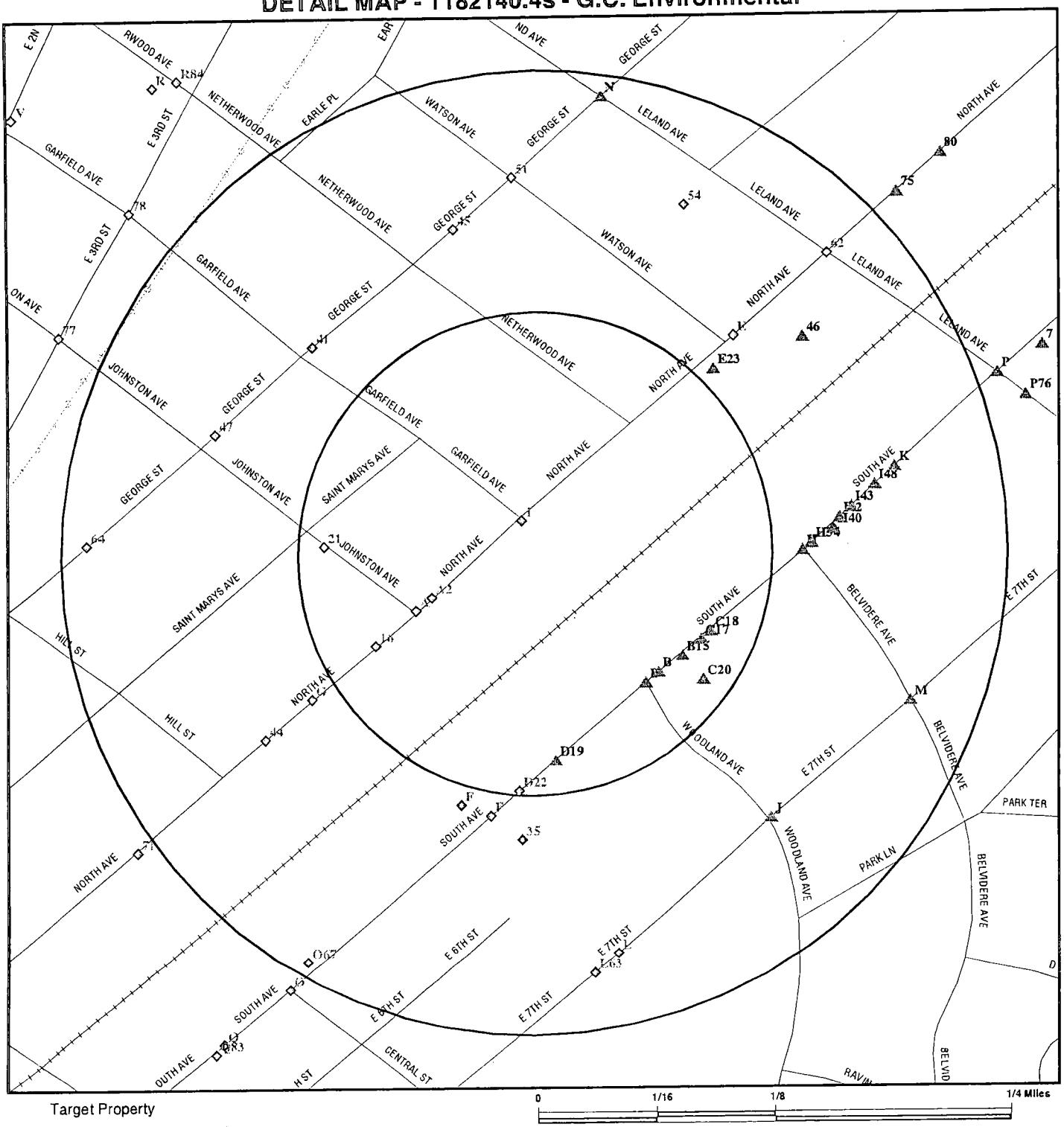
OVERVIEW MAP - 1182140.4s - G.C. Environmental



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- State Wetlands

TARGET PROPERTY:	S Ave/Rt 23 Plainfield	CUSTOMER:	G.C. Environmental
ADDRESS:	908 North Avenue	CONTACT:	Jason Rankin
CITY/STATE/ZIP:	Plainfield NJ 07062	INQUIRY #:	1182140.4s
LAT/LONG:	40.6287 / 74.4052	DATE:	April 29, 2004 6:38 pm

DETAIL MAP - 1182140.4s - G.C. Environmental



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

TARGET PROPERTY:	S Ave/Rt 23 Plainfield	CUSTOMER:	G.C. Environmental
ADDRESS:	908 North Avenue	CONTACT:	Jason Rankin
CITY/STATE/ZIP:	Plainfield NJ 07062	INQUIRY #:	1182140.4s
LAT/LONG:	40.6287 / 74.4052	DATE:	April 29, 2004 6:42 pm

ATTACHMENT F

G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

OF

PROPOSED T-MOBILE ANTENNA SITE
S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NEW JERSEY 07062
T-MOBILE SITE NO. NJ06560B

PREPARED FOR:

T-MOBILE
4 SYLVAN WAY 2ND FLOOR
PARSIPPANY, NJ 07054

DATE ISSUED: JULY 13, 2004

GCE PROJECT NUMBER: 04-240-00

410 SAW MILL RIVER ROAD • ARDSLEY, NY 10502 • TEL: (914) 674-4346 • FAX: (914) 674-4348
WWW.GCENVIRONMENTAL.COM L.I. OFFICE: (631) 249-0147

The environmental assessment described herein was conducted by and/or under the supervision of the undersigned, of G. C. Environmental, Inc. (GCE). GCE's investigation consisted solely of the activities described in the Introduction of this report, in accordance with Proposal/Work Order Number 04258, and is subject to the Limitations and Service Constraints provided in Appendix A and the Consulting Services Agreement signed prior to initiation of the assessment.

Prepared By:

Jason Rankin
Environmental Scientist

07/13/04
Date

Report Reviewed and Approved By:

Igal Goldstein
Manager, Engineering

7/13/04
Date

Nahum Kedem, P.G.
Vice President

7/13/04
Date

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the findings of a Limited Phase II Environmental Site Assessment of the proposed T-Mobile Antenna Site (the Site) located at the S Ave/Rt 23 Plainfield property, 908 North Avenue, Plainfield, New Jersey (the Property), conducted by G. C. Environmental, Inc. (GCE) in accordance with the Consulting Services Agreement signed prior to initiation of the assessment, and the ASTM E1527-00 Standards.

1.1 Purpose

The purpose of this Limited Phase II ESA was to determine, through subsurface soil sampling, whether areas of environmental concern identified in the Phase I Environmental Site Assessment report for the Site, prepared by GCE, dated May 20, 2004 (Phase I Report), have impacted the Site and to offer conclusions and recommendations for further investigation and corrective action if warranted.

1.2 Site Background

The Site is located in the City of Plainfield, Union County, New Jersey, approximately 120 feet to the southeast of the T-shaped intersection formed by Garfield Avenue and North Avenue. The Site consists of:

- An approximately 600-square-foot parcel of gravel-lined land for proposed T-Mobile antenna installation and supporting equipment located on the northern portion of the Property (Antenna & Equipment Parcel); and,

- Approximately 45 linear feet of gravel-lined land for proposed utility lines (Line Run) extending to the southeast from a proposed pole to be located on the northwestern portion of the Property to the Antenna & Equipment Parcel.

The Property is located on the southeast side of North Avenue, approximately 40 feet to the south of the T-shaped intersection by Garfield Avenue and North Avenue. The Property consists of an approximately 0.93-acre irregular-shaped parcel of gravel-lined land and is developed with an office trailer located on the northeastern portion of the Property and several storage containers located on the northern and southern portions of the Property, respectively. The remainder of the Property consists of gravel-lined land and storage areas for construction equipment and construction maintenance vehicles located throughout the Property. The frontage of the Property measures approximately 220 feet along the southeast side of North Avenue.

1.3 Previous Environmental Reports

The Phase I Report outlined the presence of the following recognized environmental conditions:

- According to Mr. Phil Suydam, the Property owner, and based on GCE's visual inspection, the Property is utilized for storage of construction equipment and construction maintenance vehicles throughout the Property by off-site tenants. During the site-inspection there were approximately ten (10) trucks and four (4) automobiles parked on the Property. No leaks and/or spills associated with these vehicles were observed. However, the usage of the Property as a parking area may have environmentally impacted the Site.

- The 1910 Sanborn Fire Insurance map provided by Environmental Data Resources, Inc. (EDR) shows the Site as vacant land and the Property as developed with a historical building located on the central portion of the Property labeled Century Rubber Trading Co. According to the City of Plainfield Building Department (CPBD) records, Century Rubber Trading Co. occupied the building from 1904 to 1924. According to the CPBD records, Samoset Laundry Service Inc. occupied the building on the Property from 1931 to 1971. The 1982 Sanborn Fire Insurance map show the Site as a parking lot and the portion of the portion of the Property as developed with the historical building labeled as Samoset Laundry Inc. According to the CPBD records, the historical building was occupied by First Avenue Cleaners in 1982. Historical industrial and commercial usages of the Property may have environmentally impacted the Site.

  According to the EDR report, the Property is listed as a State Hazardous Waste Sites (SHWS) site:

  Samoset Laundry
  902 North Avenue
  Plainfield City, NJ
  This listing is associated with a former occupant of the Property. On March 31, 1993, the Bureau of Field Operations, has listed the site as "sites with on-site source(s) of contamination". The case status is listed as "pending". Based on its description, this SHWS listing issued for the Property may environmentally impacted the Site.

Based on the above conclusions, the performance of a Limited Phase II ESA was recommended at the Site.

2.0 INVESTIGATION FIELD ACTIVITIES

2.1 Soil Sampling

On June 22, 2004, GCE subcontracted and observed the advancement of four (4) soil borings at the Site. Prior to the commencement of work, GCE arranged for a public underground utilities markout to be performed at the Property. The selection of the boring locations were based on the locations of the proposed communications equipment, accessibility of the Site, on-site conditions and the locations of public underground utilities. The soil borings were advanced as follows: soil boring B-1 was advanced in the location of the proposed communications monopole and soil borings B-2, B-3 and B-4 were advanced along the Line Run. The borings were advanced utilizing a Geoprobe drilling system. Soil boring B-1 was terminated at a depth of approximately 22 feet below grade due to refusal most likely due to the presence of shale.

On July 8, 2004, upon obtaining the client's approval, GCE arranged for the advancement of the soil boring B-1 to a depth of approximately 30 feet below grade level using an air-rotary drilling method. Groundwater was not encountered during additional drilling activities. Therefore, no groundwater sample was collected. The boring locations are presented in the Figure 2 - Site Plan. The boring logs are presented in Appendix B.

Subsurface soil samples were collected from soil borings B-1, B-2, B-3 and B-4 continuously using disposable polyethylene sample liners. The soil samples were visually classified and logged by the on-site GCE geologist for soil characterization purposes. Laboratory obtained glassware was used for the soil samples and consisted of the following:

- Volatile Organic Compounds (VOCs) - one (1) 40-mililiter (ml) glass vial equipped with a teflon lined closure per sample;
- Semi-Volatile Organic Compounds Base Neutrals (B/N), 8 RCRA Metals and PCBs - one (1) 8-ounce glass jar equipped with a teflon lined closure per sample.

Soil samples from the soil borings were placed into glass container equipped with a teflon lined closure for soils. The quantity of soil was split as follows: 5 grams of soil was placed into a 40-ml glass vial, containing 10 ml of methanol preservative; the remaining soil was placed into one (1) 8-oz glass container. Air in the head space of the 8-oz glass jar was allowed to develop. The container with the head space was field screened for the presence of VOCs using a Thermo Environmental Instruments Inc. Model 580B portable photoionization detector (PID) with a 10.6 e.v. lamp, calibrated for isobutylene standards. The following soil samples were collected:

Sample ID	Boring No.	Depth, Feet	PID Readings, parts per million (ppm)
B-1, S-1	B - 1	0-4	0.1
B-1, S-2	B - 1	4-8	0.0
B-1, S-3	B - 1	8-12	0.0
B-1, S-4	B - 1	12-16	0.0
B-1, S-5	B - 1	16-20	0.0
B-1, S-6	B - 1	20-22	0.0
B-2, S-1	B - 2	0-2	0.0
B-2, S-2	B - 2	3-5	0.0
B-3, S-1	B - 3	0-2	0.0
B-3, S-2	B - 3	3-5	0.0
B-4, S-1	B - 4	0-2	0.0
B-4, S-2	B - 4	3-5	0.0

Since no elevated levels of total VOCs were detected in any of the samples, the deepest soil samples collected from soil borings B-1 and B-4 submitted to the laboratory for analysis. The following soil samples were submitted:

Sample ID	Boring No.	Depth, Feet	PID Readings, parts per million (ppm)
B-1, S-6	B - 1	20-22	0.0
B-4, S-2	B - 4	3-5	0.0

The soil samples were logged and transferred under a chain-of-custody protocol to Chemtech Consulting Group, Inc. (Chemtech), Mountainside, New Jersey, a New Jersey State approved laboratory. The soil samples collected from borings B-1 and B-2 were analyzed for the presence of VOCs using EPA Method 8260, B/N using EPA Method 8270, PCB's and 8 RCRA Metals.

2.2 Quality Assurance/Quality Control Program

This section provides information on Site specific quality assurance/quality control program.

Soil Sampling

All drilling equipment utilized in boring advancement was steam cleaned prior to initial use. All metal parts of the Geoprobe sampler were cleaned using mechanical and chemical cleaning procedures which consisted of brushing and sweeping of loose dirt followed by detergent washing and potable water rinsing. Soil samples were collected using disposable polethylene tubing. Soil samples were transferred into the appropriate containers using dedicated disposable latex gloves.

All soil samples were carefully packed and placed in a laboratory-supplied cooler with sufficient frozen ice packs to maintain the sample temperature at 4° C at all times during shipping to the laboratory.

Chain-of-custody protocols were maintained from sample collection to delivery to the laboratory. Field information was recorded on field report and sampling log sheets. Full documentation was made as to the location and depth of all samples collected. Each sample was labeled with GCE's project number, site name and address, the sample location and depth interval, the date and time, the initials of the sampler and the requested analysis.

3.0 PHYSICAL CHARACTERISTICS OF THE SITE

3.1 Site Topography

According to the US Geological Survey (USGS) Topographic Map of Chatham, New Jersey Quadrangle, dated 1955, photorevised 1981, the Site's elevation is approximately 120 feet above mean sea level. Topographically, the Site is essentially level with no abrupt changes in elevation. The topography in the vicinity of the Site slopes gently to the south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site. Please refer to Figure 3 for the USGS Topographic Map.

3.2 Geology and Hydrogeology

3.2.1 Regional Geology and Hydrogeology

According to the 1996 Geologic Map of Northern New Jersey, prepared by the Department of Environmental Protection and Energy-Division of Science & Research, and the New Jersey Geologic Survey, the subsurface

geology in the vicinity of the Site consists of reddish-brown to brownish-purple and grayish-red siltstone and shale. Based on the information gathered during the Limited Phase II ESA, depth to bedrock in the area of the Site is greater than 30 feet below grade.

According to the 1998 Aquifers of New Jersey Map, prepared by the New Jersey Department of Environmental Protection (DEP)-Division of Science & Research, and the New Jersey Geologic Survey, the Site lies within the Fractured Rock Aquifers of the Newark Basin Part of the Piedmont which consists of sandstone, siltstone, and shale of the Passaic, Towaco, Feltville and Boonton Formations.

Based on the topography and local waterways, general groundwater flow direction in the area of the Site could be inferred to be south-southwest towards Bound Brook located approximately 7,000 feet to the south-southwest of the Site.

3.2.2 Site Geology

Based on the information gathered during the Limited Phase II ESA, the geology in the area of the Site to the explored depth of approximately 30 feet below grade consists of approximately 4 feet of medium brown sand and gravel underlain by approximately 18 feet of grayish brown fine sand underlain by approximately 8 feet of shale.

3.2.3 Site Hydrogeology

Based on the information gathered during the Limited Phase II ESA, depth to groundwater in the area of the Site is greater than 30 feet below grade.

3.3 Sensitive Environmental Receptors

According to the 1984 U.S. Department of the Interior, Fish and Wildlife Service, National Wetlands Inventory Maps for Chatham, New Jersey Quadrangle the nearest designated wetlands is a low-lying area located approximately 1,250 feet to the northwest of the Site which is designated as Riverine, Lower Perennial, Open Water (R20W). According to the 1986 New Jersey State Department of Environmental Protection (DEP) Freshwater Wetlands Maps for Chatham Southeast, New Jersey Quadrangle, the nearest designated wetlands is a low-lying area located approximately 2,500 feet to the southwest of the Site which is designated as Palustrine, Emergent, Persistent, Saturated (PEMIB).

4.0 LABORATORY ANALYTICAL RESULTS

Soil Sampling Results

The soil sampling results were compared to the DEP Non-Residential Direct Contact Soil Cleanup Criteria (Regulatory Standards).

Laboratory analysis of soil samples B-1, S-6 and B-4, S-2 indicated that the concentrations of VOCs, B/N, 8 RCRA Metals and PCBs were either non-detected, detected below their detection limits or detected below the Regulatory Standards.

The laboratory analytical report is included in Appendix C.

5.0 SUMMARY OF FINDINGS AN RECOMMENDATIONS

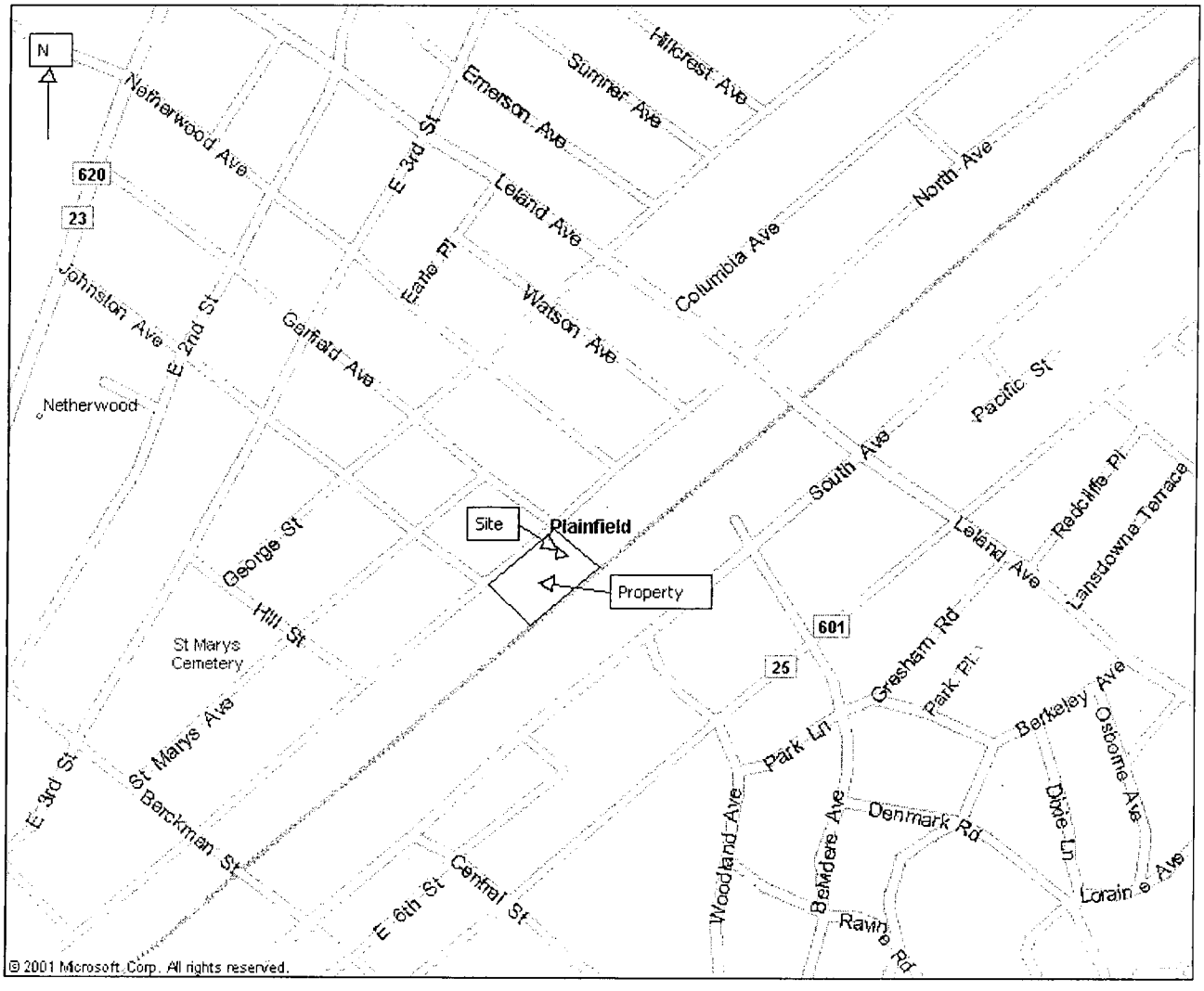
5.1 Summary of Findings

In June-July 2004, GCE performed a Limited Phase II ESA, which consisted of the advancement of four (4) soil borings and subsequent soil sampling to determine whether areas of environmental concern identified in the Phase I Report have impacted the Site. GCE's investigation revealed the following:

- Laboratory analysis of soil samples B-1, S-6 and B-4, S-2 indicated that the concentrations of VOCs, B/N, PCB's, and 8 RCRA Metals were either non-detected, detected below their detection limits or detected below the Regulatory Standards.

5.2 Recommendations

Based on the above finding, no additional investigation, remediation, or special disposal procedures are recommended at this time at the Site.



NOTE: DRAWING NOT TO SCALE. ALL LOCATIONS ARE APPROXIMATE. DRAWING INTENDED FOR USE WITH THIS GCE LTD PHASE II ESA REPORT ONLY.

G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

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LTD PHASE II ENVIRONMENTAL SITE ASSESSMENT

PROPOSED T-MOBILE ANTENNA SITE

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NEW JERSEY 07062

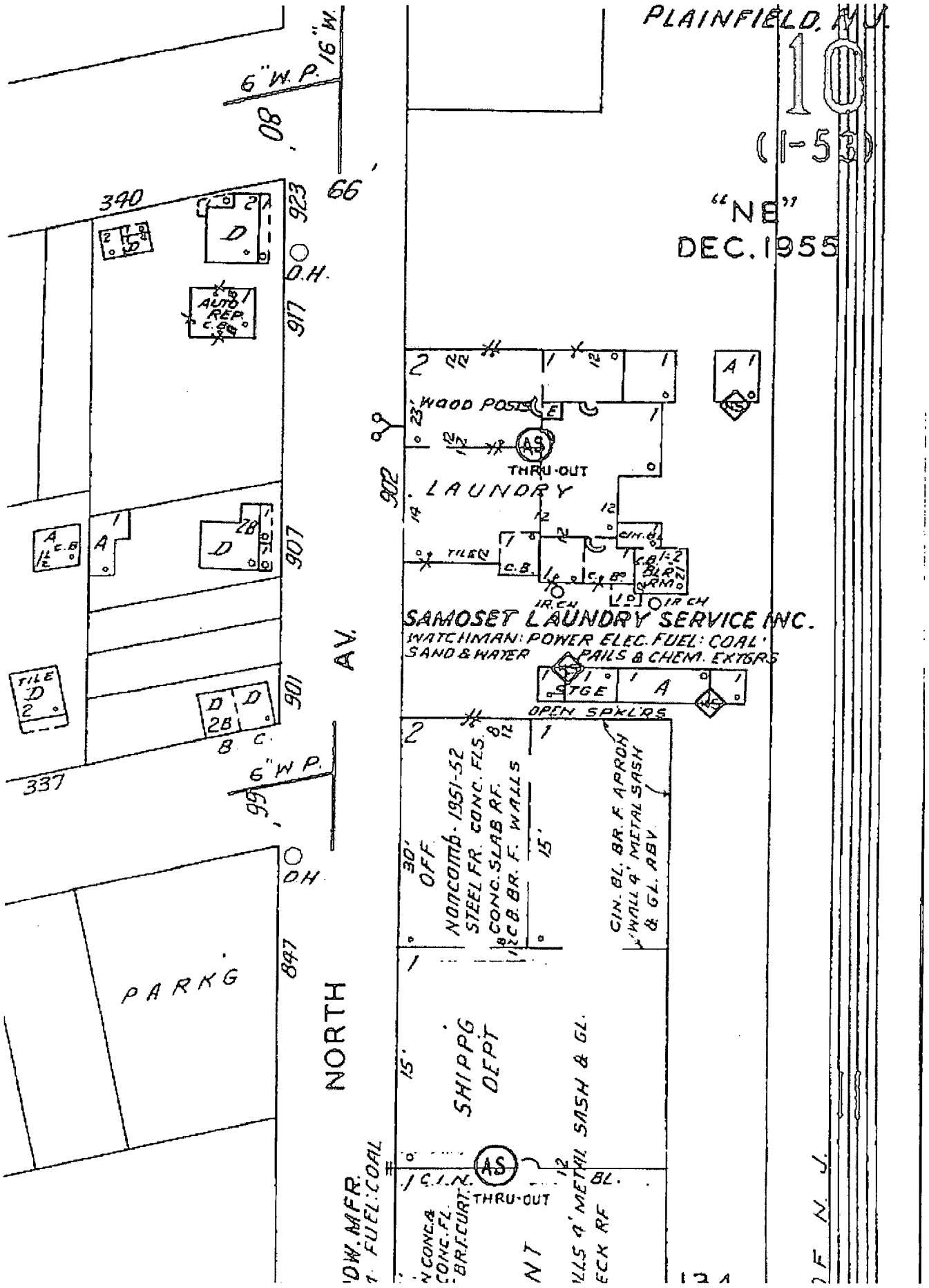
T-MOBILE SITE NO. NJ06560B

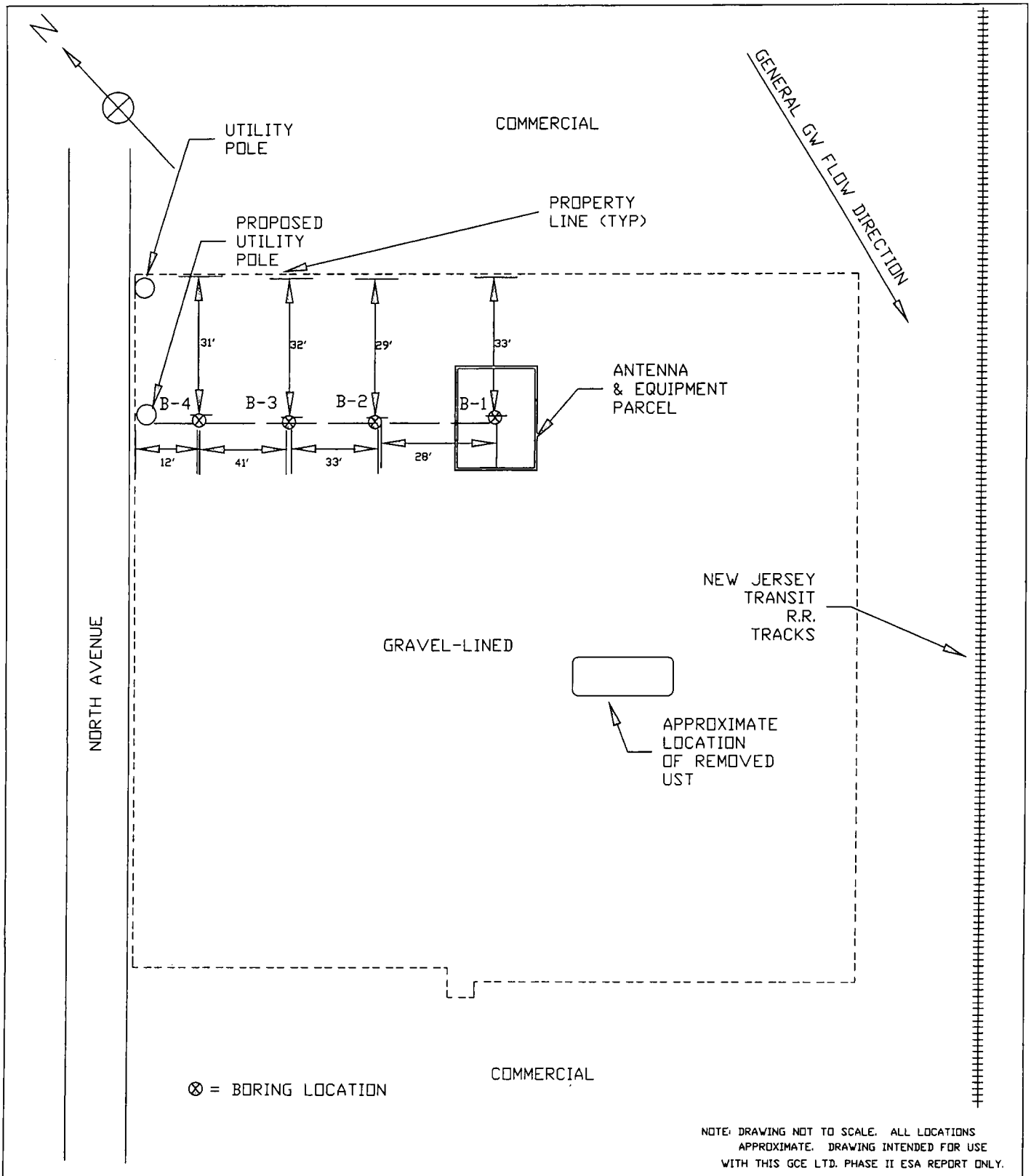
GCE PROJECT NO. 04-240-00

DWG. TITLE:

FIGURE 1

SITE LOCUS MAP





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LTD. PHASE II ENVIRONMENTAL SITE ASSESSMENT

PROPOSED T-MOBILE ANTENNA SITE

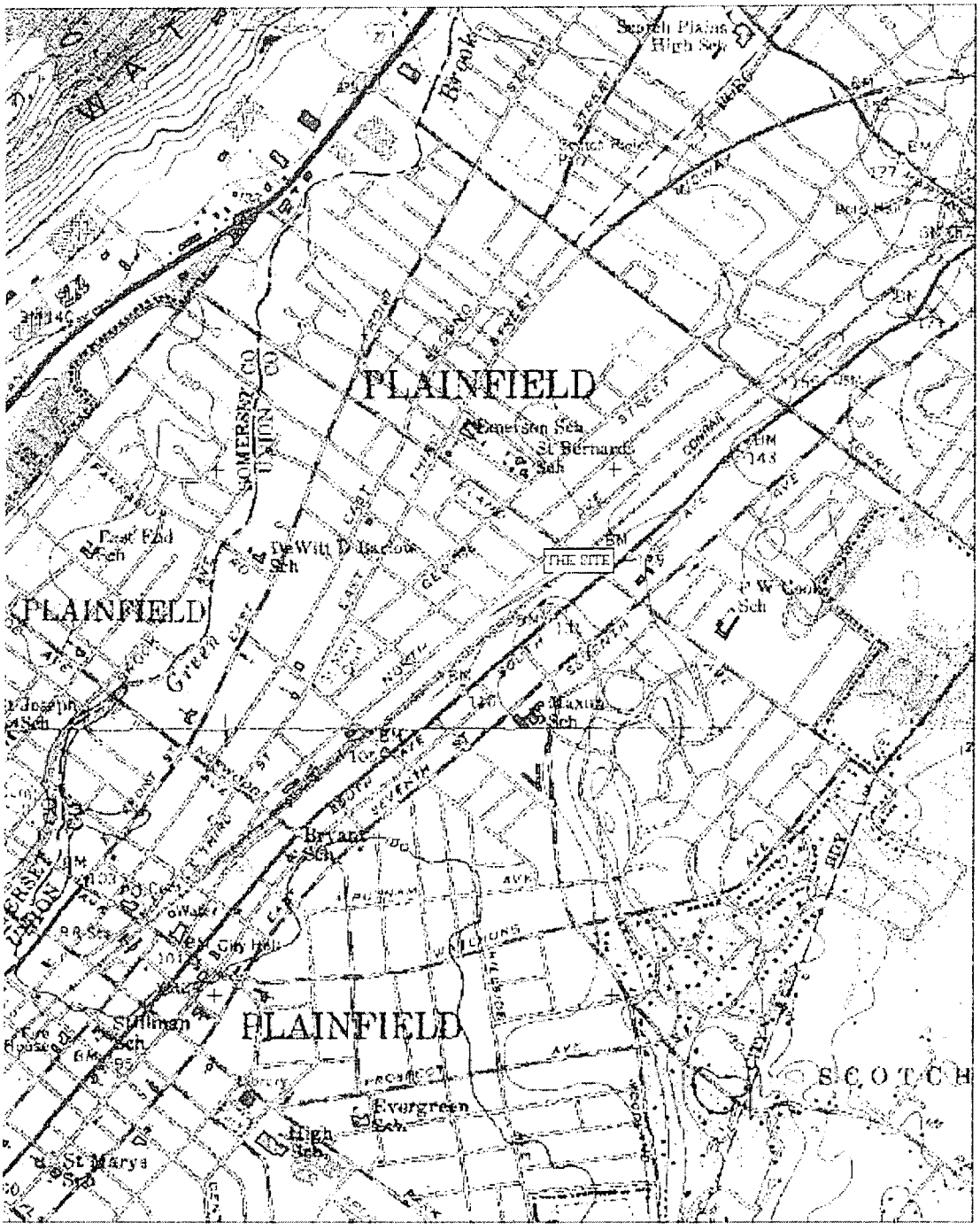
S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NJ 07062

T-MOBILE SITE NO: NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

FIGURE 2

SITE PLAN



CHATHAM, NEW JERSEY
7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
USGS 1955, PHOTOREVISED 1981

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LTD. PHASE II
ENVIRONMENTAL
SITE ASSESSMENT

PROPOSED T-MOBILE
ANTENNA SITE

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
PLAINFIELD, NJ 07062

T-MOBILE SITE NO: NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

FIGURE 3
USGS
TOPOGRAPHIC
MAP

LIMITATIONS AND SERVICE CONSTRAINTS

Limitations

The findings set forth in the attached environmental site assessment report are strictly limited in time and scope to the date of the evaluation(s). The conclusions presented in the report are based on the services described in the report, and not on scientific tasks or procedures beyond the scope of work agreed in the purchase order/work order prior to the initialization of this assessment or the time and budgeting restraints imposed by the client.

This report may contain recommendations which are partially based on the analysis of data accumulated at the time and locations set forth in the report through the subsurface investigation. However, environmental, geological, and geotechnical conditions can vary from those encountered during this investigation, and that the limitation on available data results in some level of uncertainty with respect to the interpretation of these conditions, despite the use of standard professional care and skill. Therefore, further investigations may reveal additional data or variations of the current data which may require the enclosed recommendations to be reevaluated.

Chemical analyses may have been performed for specific parameters during the course of this assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the subject site.

Partial findings of this assessment are based on data provided by others. No warranty is expressed or implied with the usage of such data.

Because of these limitations, full and complete determination as to whether a certain piece of land is or is not free from environmental contamination cannot be made. The extent of testing and statistical confidence associated with an environmental site assessment is balanced against a reasonable project budget, therefore, 100 percent confidence in environmental site assessment conclusions can never be reached. Therefore, G. C. Environmental, Inc.. does not provide guarantees, certifications, or warranties that a property is free from environmental contamination.

Service Constraints

Much of the information provided in this report is based upon personal interviews and research of all practically reviewable documents, records, and maps held by appropriate government and private agencies. This is subject to limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollection of those persons contacted.

The initial site-investigation took into account the natural and man-made features of the subject site, including any unusual or suspect phenomenon. These factors, combined with the subject site's geology, hydrology, topography, and past and present land uses served as a basis for choosing a methodology and location for subsurface investigation as well as soil and/or groundwater sampling, if conducted. The analytical results of the subsurface investigation, if provided, are meant as a representative overview of the subject site's conditions.

The locations and type of analyses of soil and /or groundwater samples, if provided, were chosen based on the same considerations listed in the paragraphs above. If samples were analyzed, they were analyzed for those parameters unique to the subject site as determined during the preceding site-evaluation.

The presence of radioactive materials or wastes, biological hazards, asbestos or lead-based paint was not investigated unless specifically noted otherwise.

This report was prepared for the exclusive use of the client and/or the parties listed on the cover of the report, and is intended for the use listed in a proposal/work order or a Consulting Services Agreement signed prior to initiation of the assessment. The use of this report by any other parties or in any other manner than that listed in a proposal/work order or a Consulting Services Agreement signed prior to initiation of the assessment requires the written consent of G. C. Environmental, Inc. This report must be presented in its entirety.

BORING/MONITORING WELL LOG

FIELD GEOLOGIST:	JASON RANKIN	BORING/MW NO.: B-1	GROUND ELEV.:
BORING CONTRACTOR:	SUMMIT DRILLING	LOCATION: 908 NORTH AVENUE PLAINFIELD, NEW JERSEY	TOP OF CASING ELEV.:
FOREMAN:	JON VOGT	DATE: 06/22/04 AND 07/08/04	

CASING:		SAMPLER:		GROUNDWATER LEVEL READINGS:
SIZE:	TYPE:	2"ø GEOPROBE 2" SPLIT-SPOON		DATE:
HAMMER:	HAMMER:			DEPTH:
FALL:	FALL:			

SAMPLE DEPTH	SAMPLE CAS. BL./FT.	SAMPLE NO.	SAMPLE DEPTH	SAMPLE PEN./REC.	SAMPLE BLOWS	GENERAL STRATA DESCRIP.	SAMPLE DESCRIPTION	WELL INSTALLATION LOG	FIELD TESTING	NOTES
						S-1	ASPHALT BROWN SAND W/GRAVEL		0.1 PPM	
5						S-2	BROWN FINE SAND		0.0 PPM	
10						S-3	REDDISH BROWN SAND/GRAVEL		0.0 PPM	
						S-4	REDDISH BROWN SAND/GRAVEL		0.0 PPM	
15						S-5	REDDISH BROWN SAND W/GRAVEL		0.0 PPM	
20										
25							SHALE			
30							END OF BORING			
35										

NOTE: SOIL SAMPLE B-1, S-6 WAS SUBMITTED TO THE LABORATORY.

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LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
BELLEVILLE, NEW JERSEY

T-MOBILE SITE NO. NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

SHEET NO.
1 OF 1

BORING/MONITORING WELL LOG

FIELD GEOLOGIST:	JASON RANKIN	BORING/MW NO.: B-2	GROUND ELEV.:
BORING CONTRACTOR:	SUMMIT DRILLING	LOCATION: 908 NORTH AVENUE PLAINFIELD, NEW JERSEY	TOP OF CASING ELEV.:
FOREMAN:	JON VOGT	DATE: 06/22/04	

CASING:		SAMPLER:		GROUNDWATER LEVEL READINGS:
SIZE:		TYPE:	2"ø GEOPROBE	DATE:
HAMMER:		HAMMER:		DEPTH:
FALL:		FALL:		

SAMPLE						GENERAL STRATA DESCRIP.	SAMPLE DESCRIPTION	WELL INSTALLATION LOG	FIELD TESTING	NOTES
DEPTH	CAS. BL./FT.	NO.	DEPTH	PEN./REC.	BLOWS					
						S-1	ASPHALT REDDISH SAND W/GRAVEL		0.0 PPM	
						S-2	REDDISH SAND W/GRAVEL		0.0 PPM	
5							END OF BORING			
10										
15										
20										
25										
30										
35										

G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

410 SAW MILL RIVER ROAD, ARDSLEY, NY 10502
Tel: (914) 674-4346 Fax: (914) 674-4348

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
BELLEVILLE, NEW JERSEY

T-MOBILE SITE NO. NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

SHEET NO.
1 OF 1

BORING/MONITORING WELL LOG

FIELD GEOLOGIST:	JASON RANKIN	BORING/MW NO.: B-3	GROUND ELEV.:
BORING CONTRACTOR:	SUMMIT DRILLING	LOCATION: 908 NORTH AVENUE PLAINFIELD, NEW JERSEY	TOP OF CASING ELEV.:
FOREMAN:	JON VOGT	DATE: 06/22/04	

CASING:		SAMPLER:		GROUNDWATER LEVEL READINGS:
SIZE:		TYPE:	2"ø GEOPROBE	DATE:
HAMMER:		HAMMER:		DEPTH:
FALL:		FALL:		

SAMPLE DEPTH	SAMPLE CAS. BL./FT.	SAMPLE NO.	SAMPLE DEPTH	SAMPLE PEN./REC.	SAMPLE BLOWS	GENERAL STRATA DESCRIP.	SAMPLE DESCRIPTION	WELL INSTALLATION LOG	FIELD TESTING	NOTES
						S-1	ASPHALT REDDISH SAND W/GRAVEL		0.0 PPM	
						S-2	REDDISH SAND W/GRAVEL		0.0 PPM	
5							END OF BORING			
10										
15										
20										
25										
30										
35										

G. C. ENVIRONMENTAL, INC.
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LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
BELLEVILLE, NEW JERSEY
T-MOBILE SITE NO. NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

SHEET NO.
1 OF 1

BORING/MONITORING WELL LOG

FIELD GEOLOGIST:	JASON RANKIN	BORING/MW NO.: B-4	GROUND ELEV.:
BORING CONTRACTOR:	SUMMIT DRILLING	LOCATION: 908 NORTH AVENUE PLAINFIELD, NEW JERSEY	TOP OF CASING ELEV.:
FOREMAN:	JON VOGT	DATE: 06/22/04	

CASING:		SAMPLER:		GROUNDWATER LEVEL READINGS:
SIZE:		TYPE:	2"ø GEOPROBE	DATE:
HAMMER:		HAMMER:		DEPTH:
FALL:		FALL:		

SAMPLE DEPTH	SAMPLE CAS. BL./FT.	SAMPLE NO.	SAMPLE DEPTH	SAMPLE PEN./REC.	SAMPLE BLOWS	GENERAL STRATA DESCRIP.	SAMPLE DESCRIPTION	WELL INSTALLATION LOG	FIELD TESTING	NOTES
						S-1	ASPHALT MEDIUM BROWN SAND W/GRAVEL		0.0 PPM	
						S-2	MEDIUM REDDISH BROWN SAND		0.0 PPM	
5							END OF BORING			
10										
15										
20										
25										
30										
35										

NOTE: SOIL SAMPLE B-4, S-2 WAS SUBMITTED TO THE LABORATORY.

G. C. ENVIRONMENTAL, INC.
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LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

S AVE/RT 23 PLAINFIELD
908 NORTH AVENUE
BELLEVILLE, NEW JERSEY
T-MOBILE SITE NO. NJ06560B
GCE PROJECT NO: 04-240-00

DWG. TITLE:

SHEET NO.
1 OF 1

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-01 Client ID: B-1S-6

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063023.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Vol: 6.2 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 6

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
Dichlorodifluoromethane	75-71-8	< 36	U	530	36	ug/Kg
Chloromethane	74-87-3	< 72	U	530	72	ug/Kg
Vinyl chloride	75-01-4	< 28	U	530	28	ug/Kg
Bromomethane	74-83-9	< 83	U	530	83	ug/Kg
Chloroethane	75-00-3	< 94	U	530	94	ug/Kg
Trichlorofluoromethane	75-69-4	< 61	U	530	61	ug/Kg
tert-Butyl Alcohol	75-65-0	< 460	U	2700	460	ug/Kg
1,1-Dichloroethene	75-35-4	< 34	U	530	34	ug/Kg
Acrolein	107-02-8	< 190	U	2700	190	ug/Kg
Acrylonitrile	107-13-1	< 340	U	2700	340	ug/Kg
Acetone	67-64-1	< 350	U	2700	350	ug/Kg
Carbon disulfide	75-15-0	< 41	U	530	41	ug/Kg
Methyl tert-butyl Ether	1634-04-4	< 38	U	530	38	ug/Kg
Methylene Chloride	75-09-2	< 66	U	530	66	ug/Kg
trans-1,2-Dichloroethene	156-60-5	< 55	U	530	55	ug/Kg
Vinyl Acetate	108-05-4	< 250	U	2700	250	ug/Kg
1,1-Dichloroethane	75-34-3	< 23	U	530	23	ug/Kg
2-Butanone	78-93-3	< 300	U	2700	300	ug/Kg
Carbon Tetrachloride	56-23-5	< 50	U	530	50	ug/Kg
2,2-Dichloropropane	594-20-7	< 33	U	530	33	ug/Kg
cis-1,2-Dichloroethene	156-59-2	< 82	U	530	82	ug/Kg
Bromochloromethane	74-97-5	< 57	U	530	57	ug/Kg
Chloroform	67-66-3	< 61	U	530	61	ug/Kg
1,1,1-Trichloroethane	71-55-6	< 43	U	530	43	ug/Kg
1,1-Dichloropropene	563-43-2	< 40	U	530	40	ug/Kg
Benzene	71-43-2	< 26	U	530	26	ug/Kg
1,2-Dichloroethane	107-06-2	< 34	U	530	34	ug/Kg
Trichloroethene	79-01-6	< 71	U	530	71	ug/Kg
1,2-Dichloropropane	78-87-5	< 34	U	530	34	ug/Kg
Dibromomethane	74-95-3	< 64	U	530	64	ug/Kg
Bromodichloromethane	75-27-4	< 37	U	530	37	ug/Kg
4-Methyl-2-Pentanone	108-10-1	< 140	U	2700	140	ug/Kg
Toluene	108-88-3	< 41	U	530	41	ug/Kg
t-1,3-Dichloropropene	10061-02-6	< 45	U	530	45	ug/Kg

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-01 Client ID: B-1S-6

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063023.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Vol: 6.2 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 6

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
cis-1,3-Dichloropropene	10061-01-5	< 16	U	530	16	ug/Kg
,1,2-Trichloroethane	79-00-5	< 55	U	530	55	ug/Kg
1,3-Dichloropropane	142-28-9	< 41	U	530	41	ug/Kg
2-Chloroethyl vinyl ether	110-75-8	< 200	U	2700	200	ug/Kg
2-Hexanone	591-78-6	< 70	U	2700	70	ug/Kg
Dibromochloromethane	124-48-1	< 40	U	530	40	ug/Kg
1,2-Dibromoethane	106-93-4	< 67	U	530	67	ug/Kg
Tetrachloroethene	127-18-4	100	J	530	35	ug/Kg
Chlorobenzene	108-90-7	< 39	U	530	39	ug/Kg
1,1,1,2-Tetrachloroethane	630-20-6	< 46	U	530	46	ug/Kg
Ethyl Benzene	100-41-4	< 43	U	530	43	ug/Kg
m&p-Xylenes	136777-61-2	< 100	U	1100	100	ug/Kg
o-Xylene	95-47-6	< 39	U	530	39	ug/Kg
Styrene	100-42-5	< 36	U	530	36	ug/Kg
Bromoform	75-25-2	< 27	U	530	27	ug/Kg
Isopropylbenzene	98-82-8	< 35	U	530	35	ug/Kg
,1,2,2-Tetrachloroethane	79-34-5	< 53	U	530	53	ug/Kg
1,2,3-Trichloropropane	96-18-4	< 48	U	530	48	ug/Kg
Bromobenzene	108-86-1	< 25	U	530	25	ug/Kg
n-propylbenzene	103-61-5	< 40	U	530	40	ug/Kg
2-Chlorotoluene	95-49-8	< 32	U	530	32	ug/Kg
,3,5-Trimethylbenzene	108-67-8	< 39	U	530	39	ug/Kg
4-Chlorotoluene	106-43-4	< 79	U	530	79	ug/Kg
tert-Butylbenzene	98-06-6	< 39	U	530	39	ug/Kg
,2,4-Trimethylbenzene	95-63-6	< 39	U	530	39	ug/Kg
sec-butylbenzene	135-98-8	< 45	U	530	45	ug/Kg
p-Isopropyltoluene	99-87-6	< 39	U	530	39	ug/Kg
,3-Dichlorobenzene	541-73-1	< 40	U	530	40	ug/Kg
,4-Dichlorobenzene	106-46-7	< 41	U	530	41	ug/Kg
n-Butylbenzene	104-51-8	< 50	U	530	50	ug/Kg
,2-Dichlorobenzene	95-50-1	< 39	U	530	39	ug/Kg
,2-Dibromo-3-Chloropropane	96-12-8	< 100	U	530	100	ug/Kg
1,2,4-Trichlorobenzene	120-82-1	< 31	U	530	31	ug/Kg
Hexachlorobutadiene	87-68-3	< 27	U	530	27	ug/Kg
Naphthalene	91-20-3	< 50	U	530	50	ug/Kg

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-01 Client ID: B-1S-6

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063023.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Wol: 6.2 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 6

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
1,2,3-Trichlorobenzene	87-61-6	< 26	U	530	26	ug/Kg
SURROGATES						
1,2-Dichloroethane-d4	17060-07-0	51.09	102 %	75 - 125		SPK: 50
Dibromofluoromethane	1868-53-7	50.15	100 %	75 - 125		SPK: 50
Toluene-d8	2037-26-5	52.7	105 %	75 - 125		SPK: 50
4-Bromofluorobenzene	460-00-4	51.52	103 %	75 - 125		SPK: 50
INTERNAL STANDARDS						
Pentafluorobenzene	363-72-4	1004679	4.58			
1,4-Difluorobenzene	540-36-3	1770880	5.31			
Chlorobenzene-d5	3114-55-4	1838167	8.57			
1,4-Dichlorobenzene-d4	3855-82-1	902524	10.72			

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 Client ID: B-4S-2

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063025.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Vol: 5.6 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 14

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
Dichlorodifluoromethane	75-71-8	< 39	U	580	39	ug/Kg
Chloromethane	74-87-3	< 79	U	580	79	ug/Kg
Vinyl chloride	75-01-4	< 31	U	580	31	ug/Kg
Bromomethane	74-83-9	< 91	U	580	91	ug/Kg
Chloroethane	75-00-3	< 100	U	580	100	ug/Kg
Trichlorofluoromethane	75-69-4	< 67	U	580	67	ug/Kg
tert-Butyl Alcohol	75-65-0	< 510	U	2900	510	ug/Kg
1,1-Dichloroethene	75-35-4	< 37	U	580	37	ug/Kg
Acrolein	107-02-8	< 210	U	2900	210	ug/Kg
Acrylonitrile	107-13-1	< 370	U	2900	370	ug/Kg
Acetone	67-64-1	< 380	U	2900	380	ug/Kg
Carbon disulfide	75-15-0	< 45	U	580	45	ug/Kg
Methyl tert-butyl Ether	1634-04-4	< 42	U	580	42	ug/Kg
Methylene Chloride	75-09-2	< 72	U	580	72	ug/Kg
trans-1,2-Dichloroethene	156-60-5	< 60	U	580	60	ug/Kg
Vinyl Acetate	108-05-4	< 270	U	2900	270	ug/Kg
1,1-Dichloroethane	75-34-3	< 25	U	580	25	ug/Kg
2-Butanone	78-93-3	< 330	U	2900	330	ug/Kg
Carbon Tetrachloride	56-23-5	< 55	U	580	55	ug/Kg
2,2-Dichloropropane	594-20-7	< 36	U	580	36	ug/Kg
cis-1,2-Dichloroethene	156-59-2	< 90	U	580	90	ug/Kg
Bromochloromethane	74-97-5	< 62	U	580	62	ug/Kg
Chloroform	67-66-3	< 67	U	580	67	ug/Kg
1,1,1-Trichloroethane	71-55-6	< 47	U	580	47	ug/Kg
1,1-Dichloropropene	563-43-2	< 43	U	580	43	ug/Kg
Benzene	71-43-2	< 28	U	580	28	ug/Kg
1,2-Dichloroethane	107-06-2	< 37	U	580	37	ug/Kg
Trichloroethene	79-01-6	< 78	U	580	78	ug/Kg
1,2-Dichloropropane	78-87-5	< 37	U	580	37	ug/Kg
Dibromomethane	74-95-3	< 70	U	580	70	ug/Kg
Bromodichloromethane	75-27-4	< 40	U	580	40	ug/Kg
4-Methyl-2-Pentanone	108-10-1	< 150	U	2900	150	ug/Kg
Toluene	108-88-3	< 45	U	580	45	ug/Kg
t-1,3-Dichloropropene	10061-02-6	< 49	U	580	49	ug/Kg

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 Client ID: B-4S-2

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063025.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Wol: 5.6 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 14

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
cis-1,3-Dichloropropene	10061-01-5	< 18	U	580	18	ug/Kg
1,1,2-Trichloroethane	79-00-5	< 60	U	580	60	ug/Kg
1,3-Dichloropropane	142-28-9	< 45	U	580	45	ug/Kg
2-Chloroethyl vinyl ether	110-75-8	< 220	U	2900	220	ug/Kg
2-Hexanone	591-78-6	< 77	U	2900	77	ug/Kg
Dibromochloromethane	124-48-1	< 44	U	580	44	ug/Kg
1,2-Dibromoethane	106-93-4	< 73	U	580	73	ug/Kg
Tetrachloroethene	127-18-4	< 38	U	580	38	ug/Kg
Chlorobenzene	108-90-7	< 43	U	580	43	ug/Kg
1,1,1,2-Tetrachloroethane	630-20-6	< 50	U	580	50	ug/Kg
Ethyl Benzene	100-41-4	< 47	U	580	47	ug/Kg
m&p-Xylenes	136777-61-2	< 110	U	1200	110	ug/Kg
o-Xylene	95-47-6	< 43	U	580	43	ug/Kg
Styrene	100-42-5	< 40	U	580	40	ug/Kg
Bromoform	75-25-2	< 29	U	580	29	ug/Kg
Isopropylbenzene	98-82-8	< 39	U	580	39	ug/Kg
1,1,2,2-Tetrachloroethane	79-34-5	< 58	U	580	58	ug/Kg
1,2,3-Trichloropropane	96-18-4	< 53	U	580	53	ug/Kg
Bromobenzene	108-86-1	< 27	U	580	27	ug/Kg
n-propylbenzene	103-61-5	< 44	U	580	44	ug/Kg
2-Chlorotoluene	95-49-8	< 35	U	580	35	ug/Kg
1,3,5-Trimethylbenzene	108-67-8	< 43	U	580	43	ug/Kg
4-Chlorotoluene	106-43-4	< 86	U	580	86	ug/Kg
tert-Butylbenzene	98-06-6	< 42	U	580	42	ug/Kg
1,2,4-Trimethylbenzene	95-63-6	< 43	U	580	43	ug/Kg
sec-butylbenzene	135-98-8	< 50	U	580	50	ug/Kg
p-Isopropyltoluene	99-87-6	< 42	U	580	42	ug/Kg
1,3-Dichlorobenzene	541-73-1	< 43	U	580	43	ug/Kg
1,4-Dichlorobenzene	106-46-7	< 45	U	580	45	ug/Kg
n-Butylbenzene	104-51-8	< 55	U	580	55	ug/Kg
1,2-Dichlorobenzene	95-50-1	< 43	U	580	43	ug/Kg
1,2-Dibromo-3-Chloropropane	96-12-8	< 110	U	580	110	ug/Kg
1,2,4-Trichlorobenzene	120-82-1	< 33	U	580	33	ug/Kg
Hexachlorobutadiene	87-68-3	< 30	U	580	30	ug/Kg
Naphthalene	91-20-3	< 54	U	580	54	ug/Kg

Volatiles

SW-846

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 Client ID: B-4S-2

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 6/30/2004 Matrix: SOIL
File ID: VG063025.D Analytical Run ID: VG063004
Dilution: 1 Instrument ID: MSVOAG
Analytical Method: 8260 Associated Blank: VBG0630M1
Sample Wt/Vol: 5.6 Units: g Soil Extract Vol: 10000
Soil Aliquot Vol: 100 % Moisture: 14

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
1,2,3-Trichlorobenzene	87-61-6	< 28	U	580	28	ug/Kg
SURROGATES						
1,2-Dichloroethane-d4	17060-07-0	49.99	100 %	75 - 125		SPK: 50
Dibromofluoromethane	1868-53-7	51.76	104 %	75 - 125		SPK: 50
Toluene-d8	2037-26-5	50.07	100 %	75 - 125		SPK: 50
4-Bromofluorobenzene	460-00-4	52.44	105 %	75 - 125		SPK: 50
INTERNAL STANDARDS						
Pentafluorobenzene	363-72-4	1065693	4.59			
1,4-Difluorobenzene	540-36-3	1806412	5.32			
Chlorobenzene-d5	3114-55-4	1866982	8.58			
1,4-Dichlorobenzene-d4	3855-82-1	945790	10.72			

Chemtech Consulting Group

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-01 Client ID: B-1S-6

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 7/2/2004 Matrix: SOIL
Date Extracted: 6/29/2004 File ID: BE012081.D
Dilution: 1 Instrument ID: BNAE
Analytical Method: 8270 Analytical Run ID: BE062904
Sample Wt/Vol: 15.2 Extract Vol: 500
Injection Vol: 2 % Moisture: 6
Associated Blank: PB15862B

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
bis(2-Chloroethyl)ether	111-44-4	< 17	U	350	17	ug/Kg
1,2-Dichlorobenzene	95-50-1	< 19	U	350	19	ug/Kg
1,3-Dichlorobenzene	541-73-1	< 13	U	350	13	ug/Kg
1,4-Dichlorobenzene	106-46-7	< 15	U	350	15	ug/Kg
2,2-oxybis(1-Chloropropane)	108-60-1	< 19	U	350	19	ug/Kg
N-Nitroso-di-n-propylamine	621-64-7	< 15	U	350	15	ug/Kg
Hexachloroethane	67-72-1	< 17	U	350	17	ug/Kg
Nitrobenzene	98-95-3	< 18	U	350	18	ug/Kg
Isophorone	78-59-1	< 13	U	350	13	ug/Kg
bis(2-Chloroethoxy)methane	111-91-1	< 16	U	350	16	ug/Kg
1,2,4-Trichlorobenzene	120-82-1	< 10	U	350	10	ug/Kg
Naphthalene	91-20-3	< 7.6	U	350	7.6	ug/Kg
4-Chloroaniline	106-47-8	< 130	U	350	130	ug/Kg
Hexachlorobutadiene	87-68-3	< 12	U	350	12	ug/Kg
2-Methylnaphthalene	91-57-6	< 6.0	U	350	6.0	ug/Kg
Hexachlorocyclopentadiene	77-47-4	< 8.7	U	350	8.7	ug/Kg
2-Chloronaphthalene	91-58-7	< 7.3	U	350	7.3	ug/Kg
2-Nitroaniline	88-74-4	< 13	U	870	13	ug/Kg
Dimethylphthalate	131-11-3	< 8.3	U	350	8.3	ug/Kg
Acenaphthylene	208-96-8	< 10	U	350	10	ug/Kg
2,6-Dinitrotoluene	606-20-2	< 15	U	350	15	ug/Kg
3-Nitroaniline	99-09-2	< 56	U	870	56	ug/Kg
Acenaphthene	83-32-9	< 7.7	U	350	7.7	ug/Kg
Dibenzofuran	132-64-9	< 11	U	350	11	ug/Kg
2,4-Dinitrotoluene	121-14-2	< 6.9	U	350	6.9	ug/Kg
Diethylphthalate	84-66-2	< 11	U	350	11	ug/Kg
4-Chlorophenyl-phenylether	7005-72-3	< 8.6	U	350	8.6	ug/Kg
Fluorene	86-73-7	< 9.9	U	350	9.9	ug/Kg
4-Nitroaniline	100-01-6	< 27	U	870	27	ug/Kg
N-Nitrosodiphenylamine	86-30-6	< 8.8	U	350	8.8	ug/Kg

Chemtech Consulting Group

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-01 **Client ID:** B-1S-6

Date Collected: 6/22/2004 **Date Received:** 6/24/2004
Date Analyzed: 7/2/2004 **Matrix:** SOIL
Date Extracted: 6/29/2004 **File ID:** BE012081.D
Dilution: 1 **Instrument ID:** BNAE
Analytical Method: 8270 **Analytical Run ID:** BE062904
Sample Wt/Wol: 15.2 **Extract Vol:** 500
Injection Vol: 2 **% Moisture:** 6
Associated Blank: PB15862B

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
Azobenzene	103-33-3	< 9.9	U	350	9.9	ug/Kg
4-Bromophenyl-phenylether	101-55-3	< 9.2	U	350	9.2	ug/Kg
Hexachlorobenzene	118-74-1	< 6.5	U	350	6.5	ug/Kg
Phenanthrene	85-01-8	< 7.8	U	350	7.8	ug/Kg
Anthracene	120-12-7	< 8.3	U	350	8.3	ug/Kg
Di-n-butylphthalate	84-74-2	< 4.6	U	350	4.6	ug/Kg
Fluoranthene	206-44-0	< 4.8	U	350	4.8	ug/Kg
Pyrene	129-00-0	< 6.2	U	350	6.2	ug/Kg
Butylbenzylphthalate	85-68-7	< 12	U	350	12	ug/Kg
3,3-Dichlorobenzidine	91-94-1	< 56	U	350	56	ug/Kg
Benzo(a)anthracene	56-55-3	< 5.3	U	350	5.3	ug/Kg
Chrysene	218-01-9	< 11	U	350	11	ug/Kg
bis(2-Ethylhexyl)phthalate	117-81-7	120	J	350	8.0	ug/Kg
Di-n-octyl phthalate	117-84-0	< 8.3	U	350	8.3	ug/Kg
Benzo(b)fluoranthene	205-99-2	< 19	U	350	19	ug/Kg
Benzo(k)fluoranthene	207-08-9	< 12	U	350	12	ug/Kg
Benzo(a)pyrene	50-32-8	< 6.0	U	350	6.0	ug/Kg
Indeno(1,2,3-cd)pyrene	193-39-5	< 8.4	U	350	8.4	ug/Kg
Dibenz(a,h)anthracene	53-70-3	< 10	U	350	10	ug/Kg
Benzo(g,h,i)perylene	191-24-2	< 15	U	350	15	ug/Kg
SURROGATES						
Nitrobenzene-d5	4165-60-0	204.44	102 %	23 - 120		SPK: 200
2-Fluorobiphenyl	321-60-8	223.99	112 %	30 - 116		SPK: 200
Terphenyl-d14	1718-51-0	298.15	149 %	18 - 137		SPK: 200
INTERNAL STANDARDS						
1,4-Dichlorobenzene-d4	3855-82-1	180641	3.56			
Naphthalene-d8	1146-65-2	700634	4.33			
Acenaphthene-d10	15067-26-2	430503	5.43			
Phenanthrene-d10	1517-22-2	676081	6.42			

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID:	S3130-01	Client ID:	B-1S-6
Date Collected:	6/22/2004	Date Received:	6/24/2004
Date Analyzed:	7/2/2004	Matrix:	SOIL
Date Extracted:	6/29/2004	File ID:	BE012081.D
Dilution:	1	Instrument ID:	BNAE
Analytical Method:	8270	Analytical Run ID:	BE062904
Sample Wt/Vol:	15.2	Extract Vol:	500
Injection Vol:	2	% Moisture:	6
Associated Blank:	PB15862B		

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
INTERNAL STANDARDS						
Chrysene-d12	1719-03-5	572122	8.55			
Perylene-d12	1520-96-3	507880	10.22			

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 Client ID: B-4S-2

Date Collected: 6/22/2004 Date Received: 6/24/2004
Date Analyzed: 7/2/2004 Matrix: SOIL
Date Extracted: 6/29/2004 File ID: BE012084.D
Dilution: 1 Instrument ID: BNAE
Analytical Method: 8270 Analytical Run ID: BE062904
Sample Wt/Wol: 15.1 Extract Vol: 1000
Injection Vol: 2 % Moisture: 14
Associated Blank: PB15862B

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
bis(2-Chloroethyl)ether	111-44-4	< 38	U	760	38	ug/Kg
1,2-Dichlorobenzene	95-50-1	< 42	U	760	42	ug/Kg
1,3-Dichlorobenzene	541-73-1	< 28	U	760	28	ug/Kg
1,4-Dichlorobenzene	106-46-7	< 32	U	760	32	ug/Kg
2,2-oxybis(1-Chloropropane)	108-60-1	< 41	U	760	41	ug/Kg
N-Nitroso-di-n-propylamine	621-64-7	< 34	U	760	34	ug/Kg
Hexachloroethane	67-72-1	< 37	U	760	37	ug/Kg
Nitrobenzene	98-95-3	< 39	U	760	39	ug/Kg
Isophorone	78-59-1	< 28	U	760	28	ug/Kg
bis(2-Chloroethoxy)methane	111-91-1	< 35	U	760	35	ug/Kg
1,2,4-Trichlorobenzene	120-82-1	< 22	U	760	22	ug/Kg
Naphthalene	91-20-3	< 17	U	760	17	ug/Kg
4-Chloroaniline	106-47-8	< 280	U	760	280	ug/Kg
Hexachlorobutadiene	87-68-3	< 27	U	760	27	ug/Kg
2-Methylnaphthalene	91-57-6	< 13	U	760	13	ug/Kg
Hexachlorocyclopentadiene	77-47-4	< 19	U	760	19	ug/Kg
2-Chloronaphthalene	91-58-7	< 16	U	760	16	ug/Kg
2-Nitroaniline	88-74-4	< 28	U	1900	28	ug/Kg
Dimethylphthalate	131-11-3	< 18	U	760	18	ug/Kg
Acenaphthylene	208-96-8	< 23	U	760	23	ug/Kg
2,6-Dinitrotoluene	606-20-2	< 33	U	760	33	ug/Kg
3-Nitroaniline	99-09-2	< 120	U	1900	120	ug/Kg
Acenaphthene	83-32-9	< 17	U	760	17	ug/Kg
Dibenzofuran	132-64-9	< 25	U	760	25	ug/Kg
2,4-Dinitrotoluene	121-14-2	< 15	U	760	15	ug/Kg
Diethylphthalate	84-66-2	< 24	U	760	24	ug/Kg
4-Chlorophenyl-phenylether	7005-72-3	< 19	U	760	19	ug/Kg
Fluorene	86-73-7	< 22	U	760	22	ug/Kg
4-Nitroaniline	100-01-6	< 60	U	1900	60	ug/Kg
N-Nitrosodiphenylamine	86-30-6	< 19	U	760	19	ug/Kg

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 **Client ID:** B-4S-2

Date Collected: 6/22/2004 **Date Received:** 6/24/2004
Date Analyzed: 7/2/2004 **Matrix:** SOIL
Date Extracted: 6/29/2004 **File ID:** BE012084.D
Dilution: 1 **Instrument ID:** BNAE
Analytical Method: 8270 **Analytical Run ID:** BE062904
Sample Wt/Vol: 15.1 **Extract Vol:** 1000
Injection Vol: 2 **% Moisture:** 14
Associated Blank: PB15862B

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
Azobenzene	103-33-3	< 22	U	760	22	ug/Kg
4-Bromophenyl-phenylether	101-55-3	< 20	U	760	20	ug/Kg
Hexachlorobenzene	118-74-1	< 14	U	760	14	ug/Kg
Phenanthrene	85-01-8	< 17	U	760	17	ug/Kg
Anthracene	120-12-7	< 18	U	760	18	ug/Kg
Di-n-butylphthalate	84-74-2	< 10	U	760	10	ug/Kg
Fluoranthene	206-44-0	< 11	U	760	11	ug/Kg
Pyrene	129-00-0	< 14	U	760	14	ug/Kg
Butylbenzylphthalate	85-68-7	< 26	U	760	26	ug/Kg
3,3-Dichlorobenzidine	91-94-1	< 120	U	760	120	ug/Kg
Benzo(a)anthracene	56-55-3	< 12	U	760	12	ug/Kg
Chrysene	218-01-9	< 24	U	760	24	ug/Kg
bis(2-Ethylhexyl)phthalate	117-81-7	600	J	760	18	ug/Kg
Di-n-octyl phthalate	117-84-0	< 18	U	760	18	ug/Kg
Benzo(b)fluoranthene	205-99-2	< 41	U	760	41	ug/Kg
Benzo(k)fluoranthene	207-08-9	< 26	U	760	26	ug/Kg
Benzo(a)pyrene	50-32-8	< 13	U	760	13	ug/Kg
Indeno(1,2,3-cd)pyrene	193-39-5	< 18	U	760	18	ug/Kg
Dibenz(a,h)anthracene	53-70-3	< 22	U	760	22	ug/Kg
Benzo(g,h,i)perylene	191-24-2	< 33	U	760	33	ug/Kg
SURROGATES						
Nitrobenzene-d5	4165-60-0	129.99	65 %	23 - 120		SPK: 200
2-Fluorobiphenyl	321-60-8	133.51	67 %	30 - 116		SPK: 200
Terphenyl-d14	1718-51-0	160.21	80 %	18 - 137		SPK: 200
INTERNAL STANDARDS						
1,4-Dichlorobenzene-d4	3855-82-1	220461	3.55			
Naphthalene-d8	1146-65-2	837247	4.33			
Acenaphthene-d10	15067-26-2	495130	5.43			
Phenanthrene-d10	1517-22-2	798108	6.39			

SVOC

SDG No.: S3130

Client: G.C. Environmental

Sample ID:	S3130-02	Client ID:	B-4S-2
Date Collected:	6/22/2004	Date Received:	6/24/2004
Date Analyzed:	7/2/2004	Matrix:	SOIL
Date Extracted:	6/29/2004	File ID:	BE012084.D
Dilution:	1	Instrument ID:	BNAE
Analytical Method:	8270	Analytical Run ID:	BE062904
Sample Wt/Wol:	15.1	Extract Vol:	1000
Injection Vol:	2	% Moisture:	14
Associated Blank:	PB15862B		

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
INTERNAL STANDARDS						
Chrysene-d12	1719-03-5	649989	8.38			
Perylene-d12	1520-96-3	587977	10.03			

PCB

SDG No.: S3130

Client: G.C. Environmental

Sample ID:	S3130-01	Client ID:	B-1S-6
Date Collected:	6/22/2004	Date Received:	6/24/2004
Date Analyzed:	7/6/2004	Matrix:	SOIL
Date Extracted:	6/29/2004	File ID:	4PC1916B.D
Dilution:	1	Instrument ID:	ECD4
Analytical Method:	PCB	Analytical Run ID:	4PC070104
% Moisture:	6.0	Associated Blank:	PB15863B
Sample Wt/Vol:	15	Extract Vol:	5000
Injection Vol:	1		

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
AROCLOR 1016	12674-11-2	< 5.5	U	18	5.5	ug/Kg
AROCLOR 1221	11104-28-2	< 3.8	U	18	3.8	ug/Kg
AROCLOR 1232	11141-16-5	< 2.5	U	18	2.5	ug/Kg
AROCLOR 1242	53469-21-9	< 3.3	U	18	3.3	ug/Kg
AROCLOR 1248	12672-29-6	< 3.9	U	18	3.9	ug/Kg
AROCLOR 1254	11097-69-1	< 1.4	U	18	1.4	ug/Kg
AROCLOR 1260	11096-82-5	< 3.1	U	18	3.1	ug/Kg
SURROGATES						
Tetrachloro-m-xylene	877-09-8	17.96	90 %	69 - 124		SPK: 20
Decachlorobiphenyl	2051-24-3	22.25	111 %	58 - 125		SPK: 20

PCB

SDG No.: S3130

Client: G.C. Environmental

Sample ID: S3130-02 **Client ID:** B-4S-2

Date Collected:	6/22/2004	**Date Received:**	6/24/2004
Date Analyzed:	7/6/2004	**Matrix:**	SOIL
Date Extracted:	6/29/2004	**File ID:**	4PC1917B.D
Dilution:	1	**Instrument ID:**	ECD4
Analytical Method:	PCB	**Analytical Run ID:**	4PC070104
% Moisture:	14.0	**Associated Blank:**	PB15863B
Sample Wt/Vol:	15	**Extract Vol:**	5000
Injection Vol:	1		

Parameter	CAS Number	Concentration	C	RDL	MDL	Units
TARGETS						
AROCLOR 1016	12674-11-2	< 6.0	U	20	6.0	ug/Kg
AROCLOR 1221	11104-28-2	< 4.1	U	20	4.1	ug/Kg
AROCLOR 1232	11141-16-5	< 2.8	U	20	2.8	ug/Kg
AROCLOR 1242	53469-21-9	< 3.6	U	20	3.6	ug/Kg
AROCLOR 1248	12672-29-6	< 4.2	U	20	4.2	ug/Kg
AROCLOR 1254	11097-69-1	< 1.6	U	20	1.6	ug/Kg
AROCLOR 1260	11096-82-5	< 3.4	U	20	3.4	ug/Kg
SURROGATES						
Tetrachloro-m-xylene	877-09-8	18.25	91 %	69 - 124		SPK: 20
Decachlorobiphenyl	2051-24-3	21.45	107 %	58 - 125		SPK: 20

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: G.C. Environmental **SDG No.:** S3130 **Method Type:** SW846

Sample ID: S3130-01 **Client ID:** B-1S-6

Contract: G.C. Environmental **Lab Code:** CHEMED **Case No.:** S3130 **SAS No.:** S3130

Matrix: SOIL **Date Received:** 6/24/2004 **Level:** LOW

% Solids: 93.9

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7440-38-2	Arsenic	1.610	mg/Kg			P	0.252	P1	P10630A
7440-39-3	Barium	65.6	mg/Kg			P	0.023	P1	P10630A
7440-43-9	Cadmium	0.110	mg/Kg	J		P	0.049	P1	P10630A
7440-47-3	Chromium	12.6	mg/Kg			P	0.101	P1	P10630A
7439-92-1	Lead	7.790	mg/Kg			P	0.110	P1	P10630A
7439-97-6	Mercury	0.01	mg/Kg	U		CV	0.01	CV1	062804A
7782-49-2	Selenium	0.822	mg/Kg	J		P	0.333	P1	P10630A
7440-22-4	Silver	0.514	mg/Kg	J	N	P	0.112	P1	P10630A

Color Before: BROWN **Clarity Before:** **Texture:** MEDIUM

Color After: YELLOW **Clarity After:** **Artifacts:**

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: G.C. Environmental **SDG No.:** S3130 **Method Type:** SW846

Sample ID: S3130-02 **Client ID:** B-4S-2

Contract: G.C. Environmental **Lab Code:** CHEMED **Case No.:** S3130 **SAS No.:** S3130

Matrix: SOIL **Date Received:** 6/24/2004 **Level:** LOW

% Solids: 86.4

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7440-38-2	Arsenic	1.730	mg/Kg			P	0.272	P1	P10630A
7440-39-3	Barium	92.4	mg/Kg			P	0.025	P1	P10630A
7440-43-9	Cadmium	0.053	mg/Kg	U		P	0.053	P1	P10630A
7440-47-3	Chromium	17.8	mg/Kg			P	0.109	P1	P10630A
7439-92-1	Lead	11.3	mg/Kg			P	0.118	P1	P10630A
7439-97-6	Mercury	0.01	mg/Kg			CV	0.01	CV1	062804A
7782-49-2	Selenium	1.290	mg/Kg			P	0.359	P1	P10630A
7440-22-4	Silver	0.380	mg/Kg	J	N	P	0.120	P1	P10630A

Color Before: BROWN **Clarity Before:** **Texture:** MEDIUM

Color After: YELLOW **Clarity After:** **Artifacts:**

Comments:

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

CHEMTECH JOB NO.: 53130
CHEMTECH QUOTE NO.:

CLIENT INFORMATION (REPORT TO BE SENT TO:)

COMPANY: GC Environmental
ADDRESS: 410 Saw Mill River Rd.
CITY: Ardsley STATE: NY ZIP: 10502
ATTENTION: Jason Rankin
PHONE: 9146744346 x115 FAX: 9146744348

PROJECT INFORMATION

PROJECT NAME: S. Ave / Rt. 23 / Plainfield
PROJECT NO.: 04-240
PROJECT MANAGER: Jason Rankin
LOCATION: Plainfield, NJ
PHONE: 9146744346 x115 FAX: 9146744348

BILLING INFORMATION

BILL TO: client PO #:
ADDRESS:
EMAIL: JR@gcenvironmental.com
CITY: STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX: 14 DAYS *
HARD COPY: DAYS *
EDD: DAYS *
* TO BE APPROVED BY CHEMTECH
** NORMAL TURNAROUND TIME - 14 DAYS

DATA DELIVERABLE INFORMATION

☐ RESULTS ONLY ☐ NY STATE CATEGORY A
☐ RESULTS PLUS QC ☐ NY STATE CATEGORY B
☐ REGULATORY FORMAT, STATE:
☐ NEW JERSEY REDUCED DELIVERABLES
☐ CLP
☐ EDD FORMAT:

ANALYSIS

1 VOC 2 SVOC 3 8270 4 8 RCRA Metals 5 PCB's 6 7 8 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
1.	B-1, S-6	Soil		+	6/22/04	1:15 pm	2	E	E	E	E						
2.	B-4, S-2	Soil		+	6/22/04	2:30	2										
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	

← Specify Preservatives
A – HCl B – HNO_3
C – H_2SO_4 D – NaOH
E – ICE F – Other

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Jason Rank	6/23/04 10:00 am	1.
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:
2.		2.
RELINQUISHED BY:	DATE/TIME:	RECEIVED FOR LAB BY:
3. UPS	6/24/04 11:45	3.

Conditions of bottles or coolers at receipt: ☐ Compliant ☐ Non-Compliant ☑ Temp. of Cooler 4
Comments:

Page of

SHIPPED VIA: CLIENT: ☐ HAND DELIVERED ☑ OVERNIGHT CHEMTECH: ☐ PICKED UP ☐ OVERNIGHT

Shipment Complete: ☑ YES ☐ NO

Ver. 7/2001

WHITE – CHEMTECH COPY FOR RETURN TO CLIENT YELLOW – CHEMTECH COPY PINK – SAMPLER COPY

21990

ATTACHMENT G

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Union County, New Jersey

UR—Urban land

Map Unit Setting

Elevation: 0 to 170 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 180 to 210 days

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability (nonirrigated): 8s

Minor Components

Udorthents

Percent of map unit: 5 percent
Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear

Data Source Information

Soil Survey Area: Union County, New Jersey
Survey Area Data: Version 6, Aug 18, 2008

USDA United States Department of Agriculture
Natural Resources Conservation Service

Web Soil Survey

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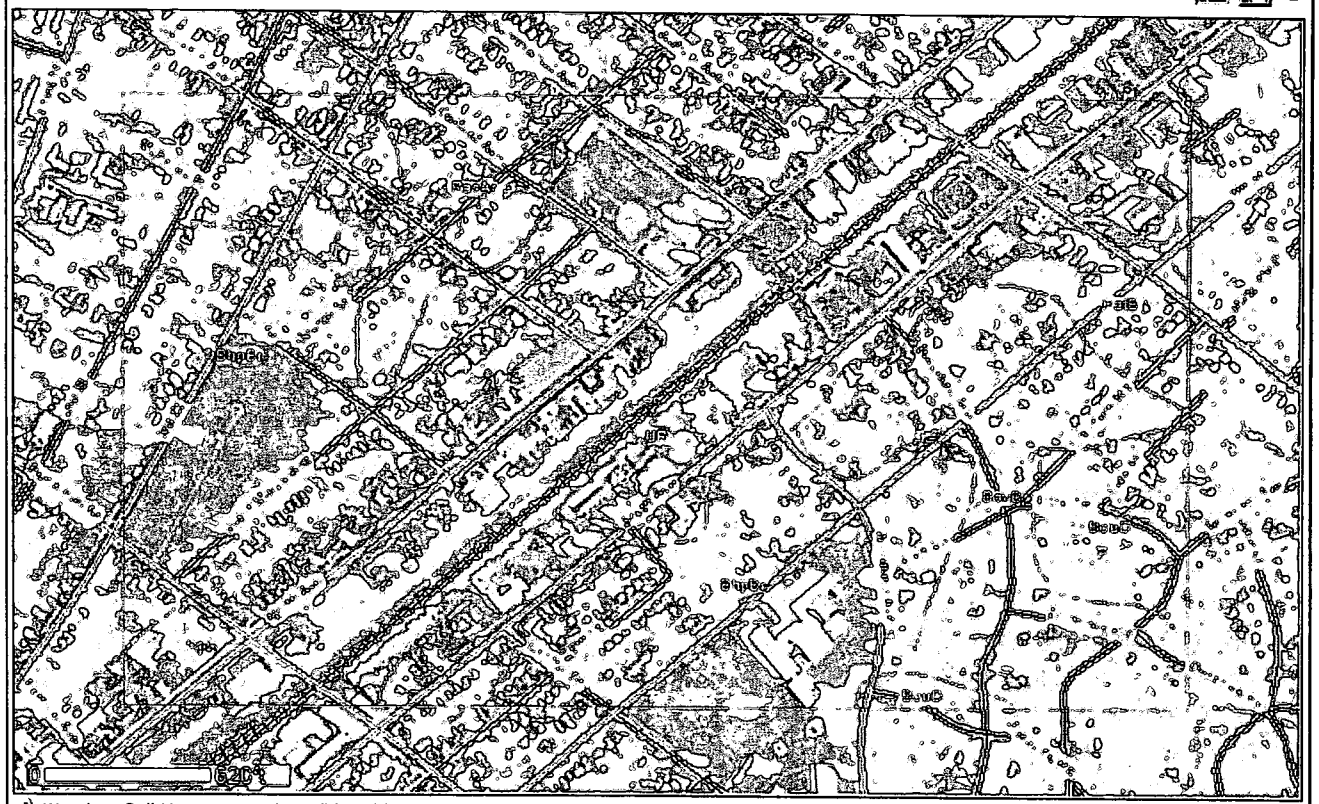
Map Unit Legend

Union County, New Jersey (NJ039)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BhpBr	Birdsboro-Urban land complex, 0 to 6 percent slopes, rarely flooded	88.6	42.3%
BouD	Boonton-Urban land complex, 15 to 25 percent slopes	9.2	4.4%
BovB	Boonton-Urban land-Haledon complex, 0 to 8 percent slopes	26.7	12.8%
HatB	Haledon-Urban land-Hasbrouck complex, 0 to 8 percent slopes	6.4	3.0%
RasAr	Raritan-Urban land-Passaic complex, 0 to 3 percent slopes, rarely flooded	17.8	8.5%
UR	Urban land	61.0	29.1%
Totals for Area of Interest		**209.6**	**100.0%**

Soil Map

Scale (not to scale)



Warning: Soil Map may not be valid at this scale.

ATTACHMENT H

NJDEP

PROJECT NUMBER	BORING NUMBER	
	SB-1	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Former Samoset Laundry — LOCATION : 902 to 924 North Avenue

ELEVATION : ground surface — DRILLING CONTRACTOR : NJDEP. BEMSA

DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length

WATER LEVELS : NA — START : 8/17/2009 9:35 — END : 0:00 — LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0 – 4	0 to 4		1A	1.96 @ 2.5 ft 0.97 @ 4.0 ft	3-inches Asphalt, Red brick FILL, with Red-brown silty clay concrete chips at bottom of core, DRY	SAMPLE COLLECTED @ 3.0 to 3.5 feet bgs (SB-1A interval)
4 – 8	4 to 8		1B		**REFUSAL @ 4.0 FEET** END OF BORING	NO WATER
8 – 12						
12 – 16						
16 – 20						
20 – 24						
24 –						

H

NJDEP	PROJECT NUMBER	BORING NUMBER SB-2	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Former Samoset Laundry — LOCATION : 902 to 924 North Avenue

ELEVATION : ground surface — DRILLING CONTRACTOR : NJDEP. BEMSA

DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length

WATER LEVELS : NA — START : 8/17/2009 10:00 — END : 0:00 — LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		2A	1.03 @ 3.5 ft	2.5-inches Asphalt, FILL then grades into Red-brown silty SAND, DRY	
4	4 to 8		2B	0.58 @ 5.5 ft 0.26 @ 6.5 ft 0.20 @ 7.5 ft	Red-brown silty SAND at top then grades into light brown silty CLAY (DAMP), then fine SAND, DRY	
8	8 to 12		2C	0.25 @ 8.5 ft 0.28 @ 9.5 ft 0.85 @ 10.5 ft	Light brown CLAY then grades into coarse SAND, DRY **REFUSAL @ 11.0 FEET**	SAMPLE COLLECTED @ 10 to 10.5 feet bgs (SB-2C interval) NO WATER
12					END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-3 SHEET 1 OF 1
		SOIL BORING LOG

PROJECT : Former Samoset Laundry			LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface		DRILLING CONTRACTOR : NJDEP. BEMSA	
DRILLING METHOD AND EQUIPMENT USED :		Geoprobe, 2" OD Macrocores , 4-feet length	
WATER LEVELS : NA	START : 8/17/2009 10:35	END : 0:00	LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		3A	1.03 @ 3.0 ft	5-inches Gravel and FILL, Red silty SAND DRY	
4	4 to 8		3B	0.19 @ 8.0 ft	Light brown silty CLAY DRY	
8	8 to 12		3C	0.23 @ 8.5 ft 0.19 @ 10 ft 0.28 @ 11.5 ft	Red brown fine to medium SAND DRY	SAMPLE COLLECTED @ 8.5 to 9.0 feet bgs (SB-3C interval) NO WATER
12					**REFUSAL @ 12.0 FEET** END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-4 SHEET 1 OF 1
		SOIL BORING LOG

PROJECT : Former Samoset Laundry LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface DRILLING CONTRACTOR : NJDEP. BEMSA
DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length
WATER LEVELS : NA START : 8/17/2009 10:55 END : 0:00 LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		4A	0.38 @ 3.0 ft 0.30 @ 4.0 ft	5-inches Asphalt, concrete FILL Red-brown silty SAND some clay, DRY	
4	4 to 8		4B	0.32 @ 5.0 ft 0.20 @ 6.5 ft 0.24 @ 7.5 ft	Red-brown SILT, some clay and black organic layers at 6.5 - feet grades into light brown silty CLAY then grades back into red-brown medium to fine SAND, DRY	SAMPLE COLLECTED @ 7.0 to 7.5 feet bgs (SB-4B interval)
8	8 to 12		4C	0.17 @ 9.0 ft 0.20 @ 10.0 ft 0.36 @ 11.5 ft	Red brown medium SAND with gravel and siltstone fragments, DRY	NO WATER
12					END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-5	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Former Samoset Laundry — LOCATION : 902 to 924 North Avenue

ELEVATION : ground surface — DRILLING CONTRACTOR : NJDEP. BEMSA

DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length

WATER LEVELS : NA — START : 8/17/2009 12:00 — END : 0:00 — LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4	1.5 ft RCVRY	5A	1.05 @ 3.5 ft	Asphalt, concrete and red brick sandy FILL DRY	
4	4 to 8		5B	0.35 @ 5.0 ft 0.40 @ 6.5 ft 4.2 @ 8.0 ft	Red-brown medium to coarse SAND some silt and clay with few pebbles, DAMP	SAMPLE COLLECTED @ 7.5 to 8.0 feet bgs (SB-5B interval) DUPLICATE SAMPLE COLLECTED (SB-11B)
8	8 to 12		5C	4.1 @ 8.0 ft 2.72 @ 9.0 ft	Red brown coarse SAND with siltstone fragments, DRY **REFUSAL @ 9.0 FEET**	NO WATER
12					END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-6 SHEET 1 OF 1

SOIL BORING LOG

PROJECT : Former Samoset Laundry LOCATION : 902 to 924 North Avenue

ELEVATION : ground surface DRILLING CONTRACTOR : NJDEP. BEMSA

DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length

WATER LEVELS : NA START : 8/17/2009 12:50 END : 0:00 LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		6A	0.4 @ 3.5 ft	1-inch Asphalt and concrete with black tar coating about 3-inches thick, Red brown SANDS, DRY	
4	4 to 8		6B	0.20 @ 6.5 ft 0.18 @ 7.5 ft	Red-brown silty SAND coarser with depth, with few pebbles, DAMP	SAMPLE COLLECTED @ 5.0 to 5.5 feet bgs (SB-6B interval)
8	8 to 12		6C	0.30 @ 8.5 ft	Red brown coarse SAND with siltstone fragments, DRY **REFUSAL @ 9.0 FEET**	NO WATER
12					END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-7 SHEET 1 OF 1
		SOIL BORING LOG

PROJECT : Former Samoset Laundry — LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface — DRILLING CONTRACTOR : NJDEP. BEMSA
DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length
WATER LEVELS : NA — START : 7/2009 13:15:00 PM — END : 0:00 — LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		7A	0.38 @ 3.5 ft	1.5-inch Asphalt, Brown coarse SAND - FILL material then grades into red-brown silty medium SAND, DRY	
4	4 to 8	6-inch RCVRY	7B	0.23 @ 7.5 ft	Red-brown sandy CLAY, DAMP	
8	8 to 12		7C	0.27 @ 8.5 ft 0.33 @ 10.0 ft 0.21 @ 11.5 ft	Red brown silty medium to coarse SAND DRY	SAMPLE COLLECTED @ 9.5 to 10.0 feet bgs (SB-7C interval) NO WATER
12					END OF BORING	
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-8 SHEET 1 OF 1
		SOIL BORING LOG

PROJECT : Former Samoset Laundry LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface DRILLING CONTRACTOR : NJDEP. BEMSA
DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length
WATER LEVELS : NA START : 8/17/2009 8:40 END : 0:00 LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		8A	3.74 @ 3.0 ft 3.75 @ 4.0 ft	6-inches Asphalt, Red-brown silty medium SAND at 4-feet black organic layer, DRY	
4	4 to 8		8B	2.52 @ 5.0 ft 1.94 @ 6.5 ft 3.56 @ 8.0 ft	Red-brown sandy SILTS with some clay , black organic layer at 4-feet, DRY	SAMPLE COLLECTED @ 7.5 to 8.0 feet bgs (SB-8B interval)
8	8 to 12		8C	3.58 @ 9.0 ft 3.52 @ 10.5 ft 2.35 @ 12.0 ft	Red-brown silty fine SAND DRY	
12	12 to 16		8D	3.40 @ 13.5 ft 3.44 @ 16.0 ft	Red-brown silty fine SAND DRY	
16	16 to 20		8E	0.99 @ 17.0 ft 0.95 @ 20.0 ft	Red-brown silty medium to coarse SAND some fragments of siltstone, DRY	
20	20 to 24		8F	1.79 @ 21.0 ft	Red-brown silty medium to coarse SAND lots of fragments of siltstone, DRY **REFUSAL @ 23.5 FEET**	NO WATER
24					END OF BORING	

NJDEP	PROJECT NUMBER	BORING NUMBER SB-9	SHEET 1 OF 1
	SOIL BORING LOG		

PROJECT : Former Samoset Laundry LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface DRILLING CONTRACTOR : NJDEP. BEMSA
DRILLING METHOD AND EQUIPMENT USED : Geoprobe, 2" OD Macrocores , 4-feet length
WATER LEVELS : NA START : 8/17/2009 8:20 END : 0:00 LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		9A	5.35 @ 3.0 ft 5.29 @ 4.0 ft	6-inches Asphalt, Red-brown silty fine SAND some siltstone fragments, DRY	SAMPLE COLLECTED @ 3.0 to 3.5 feet bgs (SB-9A interval)
4	4 to 8		9B	2.84 @ 4.5 ft 4.14 @ 5.5 ft 3.78 @ 7.0 ft	Red-brown silty fine SAND with some pebbles, lenses of clay, DRY **REFUSAL @ 7.0 FEET**	
8					END OF BORING	NO WATER
12						
16						
20						
24						

NJDEP	PROJECT NUMBER	BORING NUMBER SB-10 SHEET 1 OF 1
		SOIL BORING LOG

PROJECT : Former Samoset Laundry			LOCATION : 902 to 924 North Avenue
ELEVATION : ground surface		DRILLING CONTRACTOR : NJDEP. BEMSA	
DRILLING METHOD AND EQUIPMENT USED :		Geoprobe, 2" OD Macrocores , 4-feet length	
WATER LEVELS : NA	START : 8/17/2009 8:10	END : 0:00	LOGGER : K. Ward/NJDEP

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	NUMBER /TYPE	PID/FID SCREENING RESULTS PPM/ INTERVAL TVA-1000 - FID	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE, CONTENT, RELATIVE DENSITY OR CONSISTENCY, STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE AND FLUID LOSS, SAMPLE INTERVALS AND ANALYSIS, INSTRUMENTATION.
0	0 to 4		10A	24.13 @ 1.0 ft 18.20 @ 2.0 ft 25.33 @ 3.0 ft	3-inches Asphalt, Red-brown silty SAND with some clay and siltstone fragments, DRY	SAMPLE COLLECTED @ 3.0 to 3.5 feet bgs (SB-10A interval)
4	4 to 8		10B	7.75 @ 5.0 ft 16.04 @ 6.0 ft 14.01 @ 7.0 ft	Red-brown sandy SILTS with some clay DRY	
8	8 to 12		10C	8.31 @ 8.5 ft 9.79 @ 9.5 ft 9.26 @ 11.5 ft	Red-brown sandy SILTS with some clay , @ 12 feet siltstone fragments, DRY	
12	12 to 16		10D	8.78 @ 13.5 ft	Red-brown sandy SILTS with some clay , @ 12 feet siltstone fragments, DRY **REFUSAL @ 15.5 FEET**	NO WATER
16					END OF BORING	
20						
24						

ATTACHMENT I

Case Narrative:
Former Samoset Laundry #09080039

The National Environmental Laboratory Accreditation Conference (NELAC) is a voluntary environmental laboratory accreditation association of State and Federal agencies. NELAC established and promoted a national accreditation program that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAC accredited. The Laboratory tests that are accredited have met all the requirements established under the NELAC Standards.

Comment(s):

No Comment.

Data Qualifier(s):

U- The analyte was not detected at or above the Reporting Limit.
J- The identification of the analyte is acceptable; the reported value is an estimate.
K- The identification of the analyte is acceptable; the reported value may be biased high.
L- The identification of the analyte is acceptable; the reported value may be biased low.
NJ-There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.

Reporting Limit(s):

The Laboratory was able to achieve the Contract Required Quantitation Limits (CRQLs), where applicable, for each analyte requested.

Method(s):

All methods that are NELAC accredited in the Laboratory are noted with "NELAC" at the end of the method reference.

- TCL Volatiles Analysis, EPA SOP C-89 (GC/MS Method)

Approval: Philip Lacuya Date: 9/17/09

1

Sample ID	CAS Numt	Analyte Na	Matrix	Result	MDL		Remark	Units	Analysis	Collec'n Da
AL04896	75-71-8	DICHLOR(	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	74-87-3	CHLOROM	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-01-4	VINYL CHI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	74-83-9	BROMOM	Soil	---		6.9	U J	ug/Kg	C-123	8/17/2009
AL04896	75-00-3	CHLOROE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-69-4	TRICHLOI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-35-4	1,1-DICHL	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	76-13-1	1,1,2-TRIC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-15-0	CARBON I	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	67-64-1	ACETONE	Soil		63			ug/Kg	C-123	8/17/2009
AL04896	79-20-9	METHYL A	Soil	---		6.9	U L	ug/Kg	C-123	8/17/2009
AL04896	75-09-2	METHYLE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	156-60-5	TRANS-1,:	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	156-59-2	CIS-1,2-DI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	1634-04-4	METHYL T	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-34-3	1,1-DICHL	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	78-93-3	2-BUTANC	Soil	---		14	U	ug/Kg	C-123	8/17/2009
AL04896	67-66-3	CHLOROF	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	71-55-6	1,1,1-TRIC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	110-82-7	CYCLOHE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	56-23-5	CARBON '	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	107-06-2	1,2-DICHL	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	71-43-2	BENZENE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	79-01-6	TRICHLOI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	108-87-2	METHYLC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	78-87-5	1,2-DICHL	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-27-4	BROMODI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	10061-01-	CIS--1,3-D	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	108-10-1	4-METHYL	Soil	---		14	U	ug/Kg	C-123	8/17/2009
AL04896	10061-02-	TRANS-1,:	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	108-88-3	TOLUENE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	79-00-5	1,1,2-TRIC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	127-18-4	TETRACH	Soil		95			ug/Kg	C-123	8/17/2009
AL04896	591-78-6	2-HEXANC	Soil	---		14	U	ug/Kg	C-123	8/17/2009
AL04896	106-93-4	1,2-DIBRC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	124-48-1	DIBROMO	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	108-90-7	CHLOROE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	100-41-4	ETHYLBEI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	1330-20-7	M+P-XYLE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	95-47-6	O-XYLENE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	100-42-5	STYRENE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	75-25-2	BROMOF(	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	98-82-8	ISOPROP'	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	79-34-5	1,1,2,2-TE	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	541-73-1	1,3-DICHL	Soil	---		6.9	U J	ug/Kg	C-123	8/17/2009
AL04896	106-46-7	1,4-DICHL	Soil	---		6.9	U J	ug/Kg	C-123	8/17/2009
AL04896	95-50-1	1,2-DICHL	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	96-12-8	1,2-DIBRC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	0120-82-1	1,2,4-TRIC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	87-61-6	1,2,3-TRIC	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009
AL04896	74-97-5	BROMOCI	Soil	---		6.9	U	ug/Kg	C-123	8/17/2009

AL04897	75-71-8	DICHLOR(	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	74-87-3	CHLOROM	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-01-4	VINYL CH	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	74-83-9	BROMOM	Soil	---		6.6 U J	ug/Kg	C-123	8/17/2009
AL04897	75-00-3	CHLOROE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-69-4	TRICHLOF	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-35-4	1,1-DICHL	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	76-13-1	1,1,2-TRIC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-15-0	CARBON I	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	67-64-1	ACETONE	Soil		34		ug/Kg	C-123	8/17/2009
AL04897	79-20-9	METHYL A	Soil	---		6.6 U L	ug/Kg	C-123	8/17/2009
AL04897	75-09-2	METHYLE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	156-60-5	TRANS-1,:	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	156-59-2	CIS-1,2-DI	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	1634-04-4	METHYL T	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-34-3	1,1-DICHL	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	78-93-3	2-BUTANC	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04897	67-66-3	CHLOROF	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	71-55-6	1,1,1-TRIC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	110-82-7	CYCLOHE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	56-23-5	CARBON '	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	107-06-2	1,2-DICHL	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	71-43-2	BENZENE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	79-01-6	TRICHLOF	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	108-87-2	METHYLC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	78-87-5	1,2-DICHL	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-27-4	BROMODI	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	10061-01-	CIS--1,3-D	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	108-10-1	4-METHYL	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04897	10061-02-	TRANS-1,:	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	108-88-3	TOLUENE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	79-00-5	1,1,2-TRIC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	127-18-4	TETRACH	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	591-78-6	2-HEXANC	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04897	106-93-4	1,2-DIBRC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	124-48-1	DIBROMO	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	108-90-7	CHLOROE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	100-41-4	ETHYLBEI	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	1330-20-7	M+P-XYLE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	95-47-6	O-XYLENE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	100-42-5	STYRENE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	75-25-2	BROMOF(	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	98-82-8	ISOPROP'	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	79-34-5	1,1,2,2-TE	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	541-73-1	1,3-DICHL	Soil	---		6.6 U J	ug/Kg	C-123	8/17/2009
AL04897	106-46-7	1,4-DICHL	Soil	---		6.6 U J	ug/Kg	C-123	8/17/2009
AL04897	95-50-1	1,2-DICHL	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	96-12-8	1,2-DIBRC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	0120-82-1	1,2,4-TRIC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	87-61-6	1,2,3-TRIC	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04897	74-97-5	BROMOCI	Soil	---		6.6 U	ug/Kg	C-123	8/17/2009
AL04898	75-71-8	DICHLOR(	Soil	---		7 U	ug/Kg	C-123	8/17/2009

AL04898	74-87-3	CHLOROM	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-01-4	VINYL CHI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	74-83-9	BROMOM	Soil	---		7 U J	ug/Kg	C-123	8/17/2009
AL04898	75-00-3	CHLOROE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-69-4	TRICHLOI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-35-4	1,1-DICHL	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	76-13-1	1,1,2-TRIC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-15-0	CARBON I	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	67-64-1	ACETONE	Soil		19		ug/Kg	C-123	8/17/2009
AL04898	79-20-9	METHYL A	Soil	---		7 U L	ug/Kg	C-123	8/17/2009
AL04898	75-09-2	METHYLE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	156-60-5	TRANS-1,:	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	156-59-2	CIS-1,2-DI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	1634-04-4	METHYL T	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-34-3	1,1-DICHL	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	78-93-3	2-BUTANC	Soil	---		14 U	ug/Kg	C-123	8/17/2009
AL04898	67-66-3	CHLOROF	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	71-55-6	1,1,1-TRIC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	110-82-7	CYCLOHE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	56-23-5	CARBON '	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	107-06-2	1,2-DICHL	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	71-43-2	BENZENE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	79-01-6	TRICHLOI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	108-87-2	METHYLC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	78-87-5	1,2-DICHL	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-27-4	BROMODI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	10061-01-	CIS--1,3-D	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	108-10-1	4-METHYL	Soil	---		14 U	ug/Kg	C-123	8/17/2009
AL04898	10061-02-	TRANS-1,:	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	108-88-3	TOLUENE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	79-00-5	1,1,2-TRIC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	127-18-4	TETRACH	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	591-78-6	2-HEXANC	Soil	---		14 U	ug/Kg	C-123	8/17/2009
AL04898	106-93-4	1,2-DIBRC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	124-48-1	DIBROMO	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	108-90-7	CHLOROE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	100-41-4	ETHYLBEI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	1330-20-7	M+P-XYLE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	95-47-6	O-XYLENE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	100-42-5	STYRENE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	75-25-2	BROMOF(	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	98-82-8	ISOPROP'	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	79-34-5	1,1,2,2-TE	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	541-73-1	1,3-DICHL	Soil	---		7 U J	ug/Kg	C-123	8/17/2009
AL04898	106-46-7	1,4-DICHL	Soil	---		7 U J	ug/Kg	C-123	8/17/2009
AL04898	95-50-1	1,2-DICHL	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	96-12-8	1,2-DIBRC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	0120-82-1	1,2,4-TRIC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	87-61-6	1,2,3-TRIC	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04898	74-97-5	BROMOCI	Soil	---		7 U	ug/Kg	C-123	8/17/2009
AL04899	75-71-8	DICHLOR(	Soil	---		5.1 U	ug/Kg	C-123	8/17/2009
AL04899	74-87-3	CHLOROM	Soil	---		5.1 U	ug/Kg	C-123	8/17/2009

AL04899	75-01-4	VINYL CHI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	74-83-9	BROMOM	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04899	75-00-3	CHLOROE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-69-4	TRICHLOI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-35-4	1,1-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	76-13-1	1,1,2-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-15-0	CARBON I	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	67-64-1	ACETONE	Soil		14			ug/Kg	C-123	8/17/2009
AL04899	79-20-9	METHYL A	Soil	---		5.1	U L	ug/Kg	C-123	8/17/2009
AL04899	75-09-2	METHYLE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	156-60-5	TRANS-1,:	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	156-59-2	CIS-1,2-DI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	1634-04-4	METHYL T	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-34-3	1,1-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	78-93-3	2-BUTANC	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04899	67-66-3	CHLOROF	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	71-55-6	1,1,1-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	110-82-7	CYCLOHE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	56-23-5	CARBON '	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	107-06-2	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	71-43-2	BENZENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	79-01-6	TRICHLOI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	108-87-2	METHYLC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	78-87-5	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-27-4	BROMODI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	10061-01-	CIS--1,3-D	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	108-10-1	4-METHYL	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04899	10061-02-	TRANS-1,:	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	108-88-3	TOLUENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	79-00-5	1,1,2-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	127-18-4	TETRACH	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	591-78-6	2-HEXANC	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04899	106-93-4	1,2-DIBRC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	124-48-1	DIBROMO	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	108-90-7	CHLOROE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	100-41-4	ETHYLBEI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	1330-20-7	M+P-XYLE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	95-47-6	O-XYLENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	100-42-5	STYRENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	75-25-2	BROMOF(	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	98-82-8	ISOPROP'	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	79-34-5	1,1,2,2-TE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	541-73-1	1,3-DICHL	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04899	106-46-7	1,4-DICHL	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04899	95-50-1	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	96-12-8	1,2-DIBRC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	0120-82-1	1,2,4-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	87-61-6	1,2,3-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04899	74-97-5	BROMOCI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-71-8	DICHLOR(	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	74-87-3	CHLORON	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-01-4	VINYL CHI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009

AL04900	74-83-9	BROMOM	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04900	75-00-3	CHLOROE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-69-4	TRICHLOI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-35-4	1,1-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	76-13-1	1,1,2-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-15-0	CARBON I	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	67-64-1	ACETONE	Soil		40			ug/Kg	C-123	8/17/2009
AL04900	79-20-9	METHYL A	Soil	---		5.1	U L	ug/Kg	C-123	8/17/2009
AL04900	75-09-2	METHYLE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	156-60-5	TRANS-1,:	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	156-59-2	CIS-1,2-DI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	1634-04-4	METHYL T	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-34-3	1,1-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	78-93-3	2-BUTANC	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04900	67-66-3	CHLOROF	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	71-55-6	1,1,1-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	110-82-7	CYCLOHE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	56-23-5	CARBON '	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	107-06-2	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	71-43-2	BENZENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	79-01-6	TRICHLOI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	108-87-2	METHYLC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	78-87-5	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-27-4	BROMODI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	10061-01-	CIS--1,3-D	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	108-10-1	4-METHYL	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04900	10061-02-	TRANS-1,:	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	108-88-3	TOLUENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	79-00-5	1,1,2-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	127-18-4	TETRACH	Soil		1,100		L	ug/Kg	C-123	8/17/2009
AL04900	591-78-6	2-HEXANC	Soil	---		10	U	ug/Kg	C-123	8/17/2009
AL04900	106-93-4	1,2-DIBRC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	124-48-1	DIBROMO	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	108-90-7	CHLOROE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	100-41-4	ETHYLBEI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	1330-20-7	M+P-XYLE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	95-47-6	O-XYLENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	100-42-5	STYRENE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	75-25-2	BROMOF(	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	98-82-8	ISOPROP'	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	79-34-5	1,1,2,2-TE	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	541-73-1	1,3-DICHL	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04900	106-46-7	1,4-DICHL	Soil	---		5.1	U J	ug/Kg	C-123	8/17/2009
AL04900	95-50-1	1,2-DICHL	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	96-12-8	1,2-DIBRC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	0120-82-1	1,2,4-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	87-61-6	1,2,3-TRIC	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04900	74-97-5	BROMOCI	Soil	---		5.1	U	ug/Kg	C-123	8/17/2009
AL04901	75-71-8	DICHLOR(	Soil	---		5.4	U	ug/Kg	C-123	8/17/2009
AL04901	74-87-3	CHLOROM	Soil	---		5.4	U	ug/Kg	C-123	8/17/2009
AL04901	75-01-4	VINYL CHI	Soil	---		5.4	U	ug/Kg	C-123	8/17/2009
AL04901	74-83-9	BROMOM	Soil	---		5.4	U J	ug/Kg	C-123	8/17/2009

AL04901	75-00-3	CHLOROE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-69-4	TRICHLOI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-35-4	1,1-DICHL	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	76-13-1	1,1,2-TRIC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-15-0	CARBON I	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	67-64-1	ACETONE	Soil		43		ug/Kg	C-123	8/17/2009
AL04901	79-20-9	METHYL A	Soil	---		5.4 U L	ug/Kg	C-123	8/17/2009
AL04901	75-09-2	METHYLE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	156-60-5	TRANS-1,:	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	156-59-2	CIS-1,2-DI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	1634-04-4	METHYL T	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-34-3	1,1-DICHL	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	78-93-3	2-BUTANC	Soil	---		11 U	ug/Kg	C-123	8/17/2009
AL04901	67-66-3	CHLOROF	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	71-55-6	1,1,1-TRIC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	110-82-7	CYCLOHE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	56-23-5	CARBON '	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	107-06-2	1,2-DICHL	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	71-43-2	BENZENE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	79-01-6	TRICHLOI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	108-87-2	METHYLC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	78-87-5	1,2-DICHL	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-27-4	BROMODI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	10061-01-	CIS--1,3-D	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	108-10-1	4-METHYL	Soil	---		11 U	ug/Kg	C-123	8/17/2009
AL04901	10061-02-	TRANS-1,:	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	108-88-3	TOLUENE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	79-00-5	1,1,2-TRIC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	127-18-4	TETRACH	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	591-78-6	2-HEXANC	Soil	---		11 U	ug/Kg	C-123	8/17/2009
AL04901	106-93-4	1,2-DIBRC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	124-48-1	DIBROMO	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	108-90-7	CHLOROE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	100-41-4	ETHYLBEI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	1330-20-7	M+P-XYLE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	95-47-6	O-XYLENE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	100-42-5	STYRENE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	75-25-2	BROMOF(	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	98-82-8	ISOPROP'	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	79-34-5	1,1,2,2-TE	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	541-73-1	1,3-DICHL	Soil	---		5.4 U J	ug/Kg	C-123	8/17/2009
AL04901	106-46-7	1,4-DICHL	Soil	---		5.4 U J	ug/Kg	C-123	8/17/2009
AL04901	95-50-1	1,2-DICHL	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	96-12-8	1,2-DIBRC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	0120-82-1	1,2,4-TRIC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	87-61-6	1,2,3-TRIC	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04901	74-97-5	BROMOCI	Soil	---		5.4 U	ug/Kg	C-123	8/17/2009
AL04902	75-71-8	DICHLOR(	Soil	---		6.2 U	ug/Kg	C-123	8/17/2009
AL04902	74-87-3	CHLOROM	Soil	---		6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-01-4	VINYL CHI	Soil	---		6.2 U	ug/Kg	C-123	8/17/2009
AL04902	74-83-9	BROMOM	Soil	---		6.2 U J	ug/Kg	C-123	8/17/2009
AL04902	75-00-3	CHLOROE	Soil	---		6.2 U	ug/Kg	C-123	8/17/2009

AL04902	75-69-4	TRICHLOF	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-35-4	1,1-DICHL	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	76-13-1	1,1,2-TRIC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-15-0	CARBON I	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	67-64-1	ACETONE	Soil	---	12 U	ug/Kg	C-123	8/17/2009
AL04902	79-20-9	METHYL A	Soil	---	6.2 U L	ug/Kg	C-123	8/17/2009
AL04902	75-09-2	METHYLE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	156-60-5	TRANS-1,:	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	156-59-2	CIS-1,2-DI	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	1634-04-4	METHYL T	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-34-3	1,1-DICHL	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	78-93-3	2-BUTANC	Soil	---	12 U	ug/Kg	C-123	8/17/2009
AL04902	67-66-3	CHLOROF	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	71-55-6	1,1,1-TRIC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	110-82-7	CYCLOHE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	56-23-5	CARBON '	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	107-06-2	1,2-DICHL	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	71-43-2	BENZENE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	79-01-6	TRICHLOF	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	108-87-2	METHYLC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	78-87-5	1,2-DICHL	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-27-4	BROMODI	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	10061-01-	CIS--1,3-D	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	108-10-1	4-METHYL	Soil	---	12 U	ug/Kg	C-123	8/17/2009
AL04902	10061-02-	TRANS-1,:	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	108-88-3	TOLUENE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	79-00-5	1,1,2-TRIC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	127-18-4	TETRACH	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	591-78-6	2-HEXANC	Soil	---	12 U	ug/Kg	C-123	8/17/2009
AL04902	106-93-4	1,2-DIBRC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	124-48-1	DIBROMO	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	108-90-7	CHLOROE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	100-41-4	ETHYLBEI	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	1330-20-7	M+P-XYLE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	95-47-6	O-XYLENE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	100-42-5	STYRENE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	75-25-2	BROMOF(	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	98-82-8	ISOPROP'	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	79-34-5	1,1,2,2-TE	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	541-73-1	1,3-DICHL	Soil	---	6.2 U J	ug/Kg	C-123	8/17/2009
AL04902	106-46-7	1,4-DICHL	Soil	---	6.2 U J	ug/Kg	C-123	8/17/2009
AL04902	95-50-1	1,2-DICHL	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	96-12-8	1,2-DIBRC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	0120-82-1	1,2,4-TRIC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	87-61-6	1,2,3-TRIC	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04902	74-97-5	BROMOCI	Soil	---	6.2 U	ug/Kg	C-123	8/17/2009
AL04903	75-71-8	DICHLOR(	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	74-87-3	CHLOROM	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-01-4	VINYL CH	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	74-83-9	BROMOM	Soil	---	5.7 U J	ug/Kg	C-123	8/17/2009
AL04903	75-00-3	CHLOROE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-69-4	TRICHLOF	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009

AL04903	75-35-4	1,1-DICHL	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	76-13-1	1,1,2-TRIC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-15-0	CARBON I	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	67-64-1	ACETONE	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04903	79-20-9	METHYL A	Soil	---	5.7 U L	ug/Kg	C-123	8/17/2009
AL04903	75-09-2	METHYLE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	156-60-5	TRANS-1,:	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	156-59-2	CIS-1,2-DI	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	1634-04-4	METHYL T	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-34-3	1,1-DICHL	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	78-93-3	2-BUTANC	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04903	67-66-3	CHLOROF	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	71-55-6	1,1,1-TRIC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	110-82-7	CYCLOHE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	56-23-5	CARBON '	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	107-06-2	1,2-DICHL	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	71-43-2	BENZENE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	79-01-6	TRICHLOI	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	108-87-2	METHYLC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	78-87-5	1,2-DICHL	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-27-4	BROMODI	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	10061-01-	CIS--1,3-D	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	108-10-1	4-METHYL	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04903	10061-02-	TRANS-1,:	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	108-88-3	TOLUENE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	79-00-5	1,1,2-TRIC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	127-18-4	TETRACH	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	591-78-6	2-HEXANC	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04903	106-93-4	1,2-DIBRC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	124-48-1	DIBROMO	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	108-90-7	CHLOROE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	100-41-4	ETHYLBEI	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	1330-20-7	M+P-XYLE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	95-47-6	O-XYLENE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	100-42-5	STYRENE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	75-25-2	BROMOF(	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	98-82-8	ISOPROP'	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	79-34-5	1,1,2,2-TE	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	541-73-1	1,3-DICHL	Soil	---	5.7 U J	ug/Kg	C-123	8/17/2009
AL04903	106-46-7	1,4-DICHL	Soil	---	5.7 U J	ug/Kg	C-123	8/17/2009
AL04903	95-50-1	1,2-DICHL	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	96-12-8	1,2-DIBRC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	0120-82-1	1,2,4-TRIC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	87-61-6	1,2,3-TRIC	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04903	74-97-5	BROMOCI	Soil	---	5.7 U	ug/Kg	C-123	8/17/2009
AL04904	75-71-8	DICHLOR(	Soil	---	6 U	ug/Kg	C-123	8/17/2009
AL04904	74-87-3	CHLOROM	Soil	---	6 U	ug/Kg	C-123	8/17/2009
AL04904	75-01-4	VINYL CHI	Soil	---	6 U	ug/Kg	C-123	8/17/2009
AL04904	74-83-9	BROMOM	Soil	---	6 U J	ug/Kg	C-123	8/17/2009
AL04904	75-00-3	CHLOROE	Soil	---	6 U	ug/Kg	C-123	8/17/2009
AL04904	75-69-4	TRICHLOI	Soil	---	6 U	ug/Kg	C-123	8/17/2009
AL04904	75-35-4	1,1-DICHL	Soil	---	6 U	ug/Kg	C-123	8/17/2009

AL04904	76-13-1	1,1,2-TRIC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	75-15-0	CARBON I	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	67-64-1	ACETONE	Soil		17		ug/Kg	C-123	8/17/2009
AL04904	79-20-9	METHYL A	Soil	---		6 U L	ug/Kg	C-123	8/17/2009
AL04904	75-09-2	METHYLE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	156-60-5	TRANS-1,:	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	156-59-2	CIS-1,2-DI	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	1634-04-4	METHYL T	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	75-34-3	1,1-DICHL	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	78-93-3	2-BUTANC	Soil	---		12 U	ug/Kg	C-123	8/17/2009
AL04904	67-66-3	CHLOROF	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	71-55-6	1,1,1-TRIC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	110-82-7	CYCLOHE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	56-23-5	CARBON '	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	107-06-2	1,2-DICHL	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	71-43-2	BENZENE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	79-01-6	TRICHLOI	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	108-87-2	METHYLC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	78-87-5	1,2-DICHL	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	75-27-4	BROMODI	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	10061-01-	CIS--1,3-D	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	108-10-1	4-METHYL	Soil	---		12 U	ug/Kg	C-123	8/17/2009
AL04904	10061-02-	TRANS-1,:	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	108-88-3	TOLUENE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	79-00-5	1,1,2-TRIC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	127-18-4	TETRACH	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	591-78-6	2-HEXANC	Soil	---		12 U	ug/Kg	C-123	8/17/2009
AL04904	106-93-4	1,2-DIBRC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	124-48-1	DIBROMO	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	108-90-7	CHLOROE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	100-41-4	ETHYLBEI	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	1330-20-7	M+P-XYLE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	95-47-6	O-XYLENE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	100-42-5	STYRENE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	75-25-2	BROMOF(	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	98-82-8	ISOPROP'	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	79-34-5	1,1,2,2-TE	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	541-73-1	1,3-DICHL	Soil	---		6 U J	ug/Kg	C-123	8/17/2009
AL04904	106-46-7	1,4-DICHL	Soil	---		6 U J	ug/Kg	C-123	8/17/2009
AL04904	95-50-1	1,2-DICHL	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	96-12-8	1,2-DIBRC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	0120-82-1	1,2,4-TRIC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	87-61-6	1,2,3-TRIC	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04904	74-97-5	BROMOCI	Soil	---		6 U	ug/Kg	C-123	8/17/2009
AL04905	75-71-8	DICHLOR(	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	74-87-3	CHLOROM	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-01-4	VINYL CHI	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	74-83-9	BROMOM	Soil	---		5.3 U J	ug/Kg	C-123	8/17/2009
AL04905	75-00-3	CHLOROE	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-69-4	TRICHLOI	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-35-4	1,1-DICHL	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009
AL04905	76-13-1	1,1,2-TRIC	Soil	---		5.3 U	ug/Kg	C-123	8/17/2009

AL04905	75-15-0	CARBON I	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	67-64-1	ACETONE	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04905	79-20-9	METHYL A	Soil	---	5.3 U L	ug/Kg	C-123	8/17/2009
AL04905	75-09-2	METHYLE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	156-60-5	TRANS-1,:	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	156-59-2	CIS-1,2-DI	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	1634-04-4	METHYL T	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-34-3	1,1-DICHL	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	78-93-3	2-BUTANC	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04905	67-66-3	CHLOROF	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	71-55-6	1,1,1-TRIC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	110-82-7	CYCLOHE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	56-23-5	CARBON '	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	107-06-2	1,2-DICHL	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	71-43-2	BENZENE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	79-01-6	TRICHLOI	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	108-87-2	METHYLC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	78-87-5	1,2-DICHL	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-27-4	BROMODI	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	10061-01-	CIS--1,3-D	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	108-10-1	4-METHYL	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04905	10061-02-	TRANS-1,:	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	108-88-3	TOLUENE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	79-00-5	1,1,2-TRIC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	127-18-4	TETRACH	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	591-78-6	2-HEXANC	Soil	---	11 U	ug/Kg	C-123	8/17/2009
AL04905	106-93-4	1,2-DIBRC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	124-48-1	DIBROMO	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	108-90-7	CHLOROE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	100-41-4	ETHYLBEI	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	1330-20-7	M+P-XYLE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	95-47-6	O-XYLENE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	100-42-5	STYRENE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	75-25-2	BROMOF(	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	98-82-8	ISOPROP'	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	79-34-5	1,1,2,2-TE	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	541-73-1	1,3-DICHL	Soil	---	5.3 U J	ug/Kg	C-123	8/17/2009
AL04905	106-46-7	1,4-DICHL	Soil	---	5.3 U J	ug/Kg	C-123	8/17/2009
AL04905	95-50-1	1,2-DICHL	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	96-12-8	1,2-DIBRC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	0120-82-1	1,2,4-TRIC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	87-61-6	1,2,3-TRIC	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04905	74-97-5	BROMOCI	Soil	---	5.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-71-8	DICHLOR(	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	74-87-3	CHLORON	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-01-4	VINYL CH	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	74-83-9	BROMOM	Soil	---	6.3 U J	ug/Kg	C-123	8/17/2009
AL04906	75-00-3	CHLOROE	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-69-4	TRICHLOI	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-35-4	1,1-DICHL	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	76-13-1	1,1,2-TRIC	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-15-0	CARBON I	Soil	---	6.3 U	ug/Kg	C-123	8/17/2009

AL04906	67-64-1	ACETONE	Soil		28	K	ug/Kg	C-123	8/17/2009
AL04906	79-20-9	METHYL A	Soil	---		6.3 U L	ug/Kg	C-123	8/17/2009
AL04906	75-09-2	METHYLE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	156-60-5	TRANS-1,:	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	156-59-2	CIS-1,2-DI	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	1634-04-4	METHYL T	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-34-3	1,1-DICHL	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	78-93-3	2-BUTANC	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04906	67-66-3	CHLOROF	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	71-55-6	1,1,1-TRIC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	110-82-7	CYCLOHE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	56-23-5	CARBON '	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	107-06-2	1,2-DICHL	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	71-43-2	BENZENE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	79-01-6	TRICHLOI	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	108-87-2	METHYLC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	78-87-5	1,2-DICHL	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	75-27-4	BROMODI	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	10061-01-	CIS--1,3-D	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	108-10-1	4-METHYL	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04906	10061-02-	TRANS-1,:	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	108-88-3	TOLUENE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	79-00-5	1,1,2-TRIC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	127-18-4	TETRACH	Soil		220		ug/Kg	C-123	8/17/2009
AL04906	591-78-6	2-HEXANC	Soil	---		13 U	ug/Kg	C-123	8/17/2009
AL04906	106-93-4	1,2-DIBRC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	124-48-1	DIBROMO	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	108-90-7	CHLOROE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	100-41-4	ETHYLBEI	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	1330-20-7	M+P-XYLE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	95-47-6	O-XYLENE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	100-42-5	STYRENE	Soil	---		6.3 U L	ug/Kg	C-123	8/17/2009
AL04906	75-25-2	BROMOF(	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	98-82-8	ISOPROP'	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	79-34-5	1,1,2,2-TE	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	541-73-1	1,3-DICHL	Soil	---		6.3 U J	ug/Kg	C-123	8/17/2009
AL04906	106-46-7	1,4-DICHL	Soil	---		6.3 U J	ug/Kg	C-123	8/17/2009
AL04906	95-50-1	1,2-DICHL	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	96-12-8	1,2-DIBRC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	0120-82-1	1,2,4-TRIC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	87-61-6	1,2,3-TRIC	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04906	74-97-5	BROMOCI	Soil	---		6.3 U	ug/Kg	C-123	8/17/2009
AL04907	75-71-8	DICHLOR(	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	74-87-3	CHLORON	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	75-01-4	VINYL CHI	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	74-83-9	BROMOM	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	75-00-3	CHLOROE	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	75-69-4	TRICHLOI	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	75-35-4	1,1-DICHL	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	76-13-1	1,1,2-TRIC	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	75-15-0	CARBON I	Aqueous	---		5 U J	ug/L	C-89	8/17/2009
AL04907	67-64-1	ACETONE	Aqueous	---		10 U J	ug/L	C-89	8/17/2009

AL04907	79-20-9	METHYL A	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	75-09-2	METHYLE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	156-60-5	TRANS-1,:	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	1634-04-4	METHYL T	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	75-34-3	1,1-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	156-59-2	CIS-1,2-DI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	78-93-3	2-BUTANC	Aqueous	---	10 U J	ug/L	C-89	8/17/2009
AL04907	74-97-5	BROMOCI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	67-66-3	CHLOROF	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	71-55-6	1,1,1-TRIC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	110-82-7	CYCLOHE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	56-23-5	CARBON '	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	71-43-2	BENZENE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	107-06-2	1,2-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	79-01-6	TRICHLOI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	78-87-5	1,2-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	75-27-4	BROMODI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	10061-01-	CIS-1,3-DI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	108-10-1	4-METHYL	Aqueous	---	10 U J	ug/L	C-89	8/17/2009
AL04907	108-88-3	TOLUENE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	10061-02-	TRANS-1,:	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	79-00-5	1,1,2-TRIC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	127-18-4	TETRACH	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	108-87-2	METHYLC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	124-48-1	DIBROMO	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	106-93-4	1,2-DIBRC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	591-78-6	2-HEXANC	Aqueous	---	10 U J	ug/L	C-89	8/17/2009
AL04907	108-90-7	CHLOROE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	79-34-5	1,1,2,2-TE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	100-41-4	ETHYLBEI	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	1330-20-7	M/P-XYLE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	95-47-6	O-XYLENE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	100-42-5	STYRENE	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	75-25-2	BROMOF(	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	98-82-8	ISOPROP'	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	541-73-1	1,3-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	106-46-7	1,4-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	95-50-1	1,2-DICHL	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	96-12-8	1,2-DIBRC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	0120-82-1	1,2,4-TRIC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009
AL04907	87-61-6	1,2,3-TRIC	Aqueous	---	5 U J	ug/L	C-89	8/17/2009

Submit Da	Station ID	Project Nu	Survey Name
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
8/18/2009	SB-1	9080039	FORMER SAMOSET LAUNDRY
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Case Narrative:
Former Samoset Laundry #09080039

The National Environmental Laboratory Accreditation Conference (NELAC) is a voluntary environmental laboratory accreditation association of State and Federal agencies. NELAC established and promoted a national accreditation program that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAC accredited. The Laboratory tests that are accredited have met all the requirements established under the NELAC Standards.

Comment(s):

No Comment.

Data Qualifier(s):

U- The analyte was not detected at or above the Reporting Limit.
J- The identification of the analyte is acceptable; the reported value is an estimate.
K- The identification of the analyte is acceptable; the reported value may be biased high.
L- The identification of the analyte is acceptable; the reported value may be biased low.
NJ-There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.

Reporting Limit(s):

The Laboratory was able to achieve the Contract Required Quantitation Limits (CRQLs), where applicable, for each analyte requested.

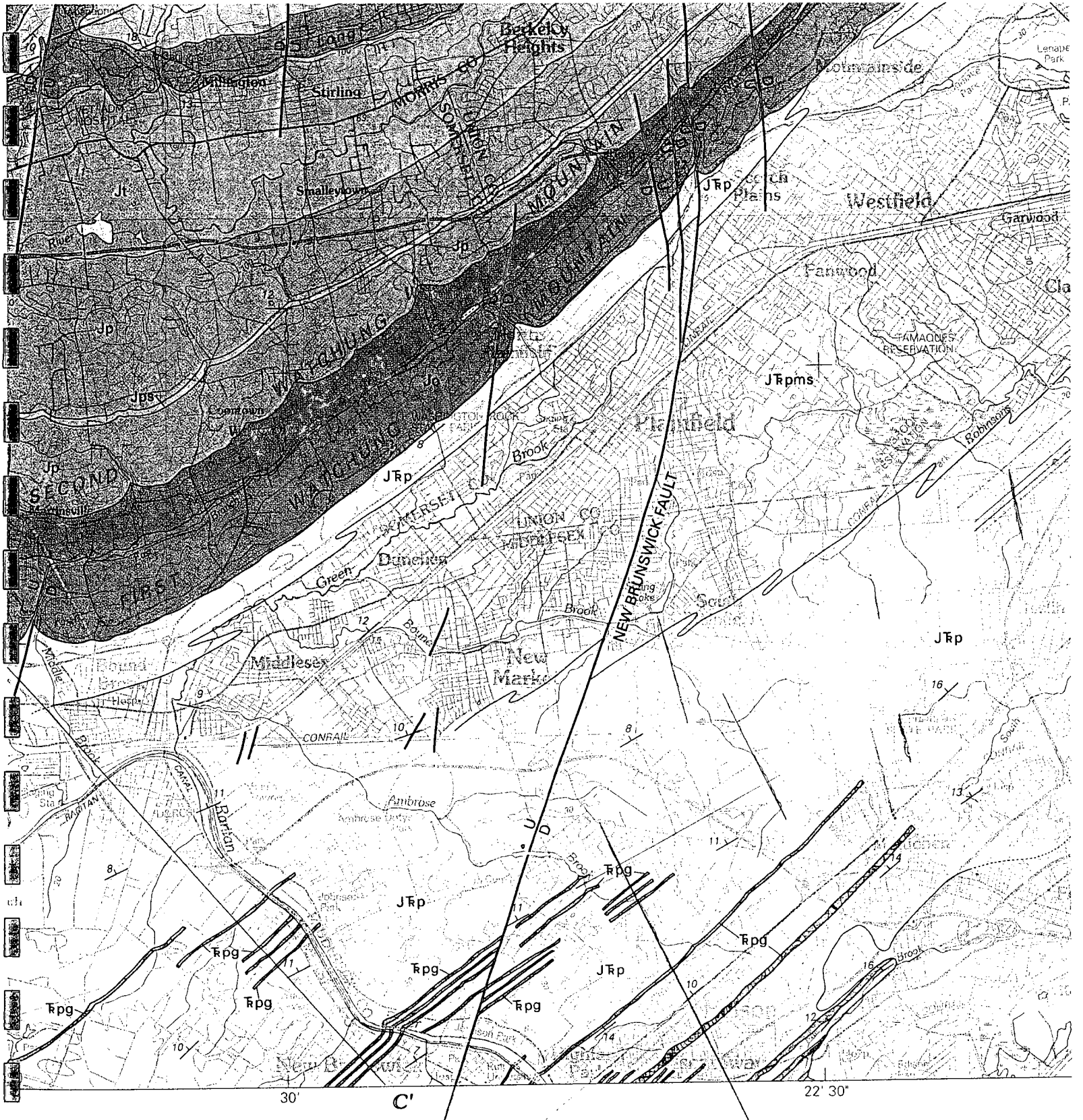
Method(s):

All methods that are NELAC accredited in the Laboratory are noted with "NELAC" at the end of the method reference.

- TCL Volatiles Analysis, EPA SOP C-89 (GC/MS Method)

Approval: _____ Date: _____

ATTACHMENT J



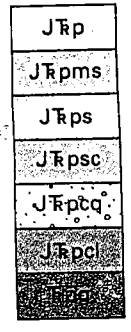
BEDROCK GEOLOGIC MAP OF NORTHERN NE

By

Avery Ala Drake, Jr.,[1] Richard A. Volkert,[2] Donald H. Monteverde,[2] Gr
Hugh F. Houghton,[2] Ronald A. Parker,[1] and Richard F. Da

1996

flows. The flows are separated in places by a weathered zone or by a [illegible] up to 3-m- (10-ft-) thick bed of red siltstone (not shown on map) or volcaniclastic rock. Lowest flow is generally massive and has widely spaced curvilinear joints; columnar joints in lowest flow become more common toward the northeast. Middle flow is massive or has columnar jointing. Lower part of the uppermost flow has pillow structures; upper part has pahoehoe flow structures. Tops and bottoms of flow layers are vesicular. Maximum thickness is about 182 m (597 ft)



Passaic Formation (Lower Jurassic and Upper Triassic) (Olsen, 1980)—Reddish-brown to brownish-purple and grayish-red siltstone and shale (JTRp) maximum thickness 3,600 m (11,810 ft). At places contains mapped sandy mudstone (JTRpms), sandstone (JTRps), conglomeratic sandstone (JTRpsc) and conglomerate containing clasts of quartzite (JTRpcq), or limestone (JTRpcl). Formation coarsens up section and to the southwest. Quartzite conglomerate unit (JTRpcq) is reddish-brown pebble conglomerate, pebbly sandstone, and sandstone in upward-fining sequences 1 to 2 m (3–6 ft) thick. Clasts are subangular to subrounded, quartz and quartzite in sandstone matrix. Sandstone is medium to coarse grained, feldspathic (up to 20 percent feldspar), and locally contains pebble and cobble layers. Conglomerate thickness exceeds 850 m (2,790 ft). Limestone conglomerate unit (JTRpcl) is a medium-bedded to massive, pebble to boulder conglomerate. Clasts are subangular dolomitic limestone in matrix of brownish- to purplish-red sandstone to mudstone; matrix weathers light gray to white near faults. Maximum thickness unknown.

Conglomeratic sandstone (JTRpsc) is brownish-red pebble conglomerate, medium- to coarse-grained feldspathic sandstone, and micaceous siltstone; unit is planar to low-angle trough cross laminated, burrowed, and contains local pebble layers. Unit forms upward-fining sequences 0.5 to 2.5 m (1.6–8 ft) thick. Conglomeratic sandstone thickness exceeds 800 m (2,625 ft). Sandstone (JTRps) is interbedded grayish-red to brownish-red, medium- to fine-grained, medium- to thick-bedded sandstone and brownish- to purplish-red, coarse-grained siltstone; unit is planar to ripple cross laminated, fissile, locally calcareous, contains desiccation cracks and root casts. Upward-fining cycles are 1.8 to 4.6 m (6–15 ft) thick. Sandstone beds are coarser and thicker near conglomerate units (JTRpcq, JTRpcl). Maximum thickness about 1,100 m (3,610 ft).

Sandy mudstone (JTRpms) is reddish-brown to brownish-red, massive, silty to sandy mudstone and siltstone, which are bioturbated, ripple cross laminated, and interbedded with lenticular sandstone. To southwest where similar lithologic units also occur, they have not been mapped separately, but have been included in undivided unit JTRp. Rhythmic cycles 2 to 7 m (7–23 ft) thick of gray-bed sequences (TRpg), termed Van Houten cycles by Olsen (1985), contain basal thin-bedded to finely laminated shale to siltstone, which grade upward through laminated to microlaminated, locally calcareous mudstone to siltstone and finally into massive silty mudstone. Lowest part of cycle has some desiccation features and local fossils; middle part has highest organic content and the most fossils; highest part contains mudcracks, burrows, and root casts. Gray-bed cycles are abundant in lower half of Passaic Formation and less common in upper half. Rocks of the Passaic Formation have been locally thermally metamorphosed to hornfels where in contact with the Orange Mountain Basalt, diabase dikes, and sheetlike intrusions. Total thickness of formation ranges from 3,500 to 3,600 m (11,480–11,810 ft)

Kanouse Sandstone, Esopus Formation, and Connelly Conglomerate, undivided (Lower Devonian)

Kanouse Sandstone (Kümmel, 1908)—Medium-gray, light-brown, and grayish-red, fine- to coarse-grained, thin- to thick-bedded sparsely fossiliferous sandstone and pebble conglomerate. Basal conglomerate beds are interbedded with siltstone similar to the upper part of the Esopus Formation and contain well-sorted, subangular to subrounded, gray and white quartz pebbles less than 1 cm (0.4 in.) long. Lower contact gradational. About 14 m (46 ft) thick

Esopus Formation (Vanuxem, 1842; Boucot, 1959)—Light- to dark-gray, laminated to thin-bedded siltstone interbedded with dark-gray to black mudstone, dusky-blue sandstone and siltstone, and yellowish-gray, fossiliferous siltstone and sandstone. Lower contact probably conformable with the Connelly Conglomerate. The formation is about 100 m (330 ft) thick at Greenwood Lake and estimated at 55 m (180 ft) thick in Longwood Valley

Connelly Conglomerate (Chadwick, 1908)—Grayish-orange weathering, very light gray to yellowish-gray, thin-bedded quartz-pebble conglomerate. Quartz pebbles average 1 to 2 cm (0.4–0.8 in.), are subrounded to well rounded, and well sorted. The unit unconformably overlies the Berkshire Valley Formation. About 11 m (36 ft) thick

Berkshire Valley and Poxono Island Formations, undivided (Upper Silurian)—Thickness ranges from 76 m (250 ft) at Greenwood Lake to 122 m (400 ft) in Longwood Valley

Berkshire Valley Formation (Barnett, 1970)—Commonly yellowish-gray-weathering, medium-gray to pinkish-gray, very thin to thin-bedded fossiliferous limestone interbedded with gray to greenish-gray calcareous siltstone and silty dolomite, medium-gray to light-gray dolomite conglomerate, and grayish-black, thinly laminated shale. Lower contact conformable. Thickness ranges from 27 to 38 m (90–125 ft) thick

Poxono Island Formation (White, 1882; Barnett, 1970)—Very thin to medium-bedded sequence of medium-gray, greenish-gray, or yellowish-gray, mud-cracked dolomite; light-green, pitted, medium-grained calcareous sandstone, siltstone, and edgewise conglomerate containing gray dolomite; and quartz-pebble conglomerate containing angular to subangular pebbles as much as 2 cm (0.8 in.) long. Interbedded grayish-green shales at lower contact are transitional into underlying Longwood Shale. Thickness ranges from 49 to 84 m (160–275 ft) thick

Longwood Shale (Upper and Middle Silurian) (Darton, 1894)—Dark-reddish-brown, thin- to very thick bedded shale interbedded with cross-bedded, very dark red, very thin to thin-bedded sandstone and siltstone. Lower contact conformable. About 100 m (330 ft) thick

Green Pond Conglomerate (Middle and Lower Silurian) (Rogers, 1836)—Medium- to coarse-grained quartz-pebble conglomerate, quartzitic arkose and orthoquartzite, and thin- to thick-bedded reddish-brown siltstone. Grades downward into gray, very dark red, or grayish-purple, medium- to coarse-grained, thin- to very thick bedded pebble to cobble conglomerate containing clasts of red shale, siltstone, and chert; yellowish-gray sandstone and chert; dark-gray shale and chert; and white-gray and pink milky quartz. Quartz cobbles are as long as 10 cm (4 [illegible] red shale clasts are as much as 46 cm (18 in.) across. Milky

ATTACHMENT K

Form DWR-052
3/81

NEW JE[illegible] DEPARTMENT OF ENVIRONMENTAL P[illegible]TION
DIVISION OF WATER RESOURCES

REPORT OF PHONE CALL OR VISIT

Bureau or Office Metro Bureau Reg. Enf.

In _____ Out _____

File Samoset Laundry -

Date 1/24/86 Time _____

Routing _____

Person Contacted Mrs. Finne Phone No. 755-5141

Affiliation Finne Building and Dev., Watchung

Subject of Call Visit: Property next to Samoset Laundry
902 North Ave,

Summary of Call Visit

I spoke with Mrs. Finne whose son Mike owns Finne Construction + Dev. She state that the Company owned the property next to Samoset Laundry. Said Property may be Co-location of Production well used by Samoset.

Mrs Finne stated she would have her Son Call on Monday -

Mike - work # 561-8407

Home # 232-8262

1/28/86 - Spoke with Mike Finne - stated he owns the property next to Samoset Laundry. The production well was located on his property.

Action Recommended Approx. 5 years ago the pumps and piping were removed from the well and it was covered in concrete.

Tony DeCandia
Signature

K

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

INVESTIGATION MEMORANDUM

Persons Conducting Investigation
A. DeCandia
R. Cerbone

Complaint No./NJPDES No. Samoset

Date of Investigation 5/28/86

Routing file -

Location of Incident 902 North Ave, Plainfield
Phinne Constr. Co - Part of Samoset

Purpose of Investigation Well Sample / Soil Sample

Persons Interviewed Mike Phinne - owner

Summary of Findings

a production well used by Samoset is located on property Resently owned by Phinne Construct. Measurements on the well gave the following Information - 36' to water, 51' to bottom 8" Casing -
Approx 45 gall of water was evacuated from well #32425 - WO Sample taken at 11:20
a Soil Sample #32426 was taken at a depth of 2' deep in the rear yard next to fence, Samoset property line.

ATTACHMENT L

NJDEP, BEMSA
4-mile Ground Water Withdrawel Apportionment Table
Former Samoset Laundry
902-924 North Avenue
Plainfield, New Jersey

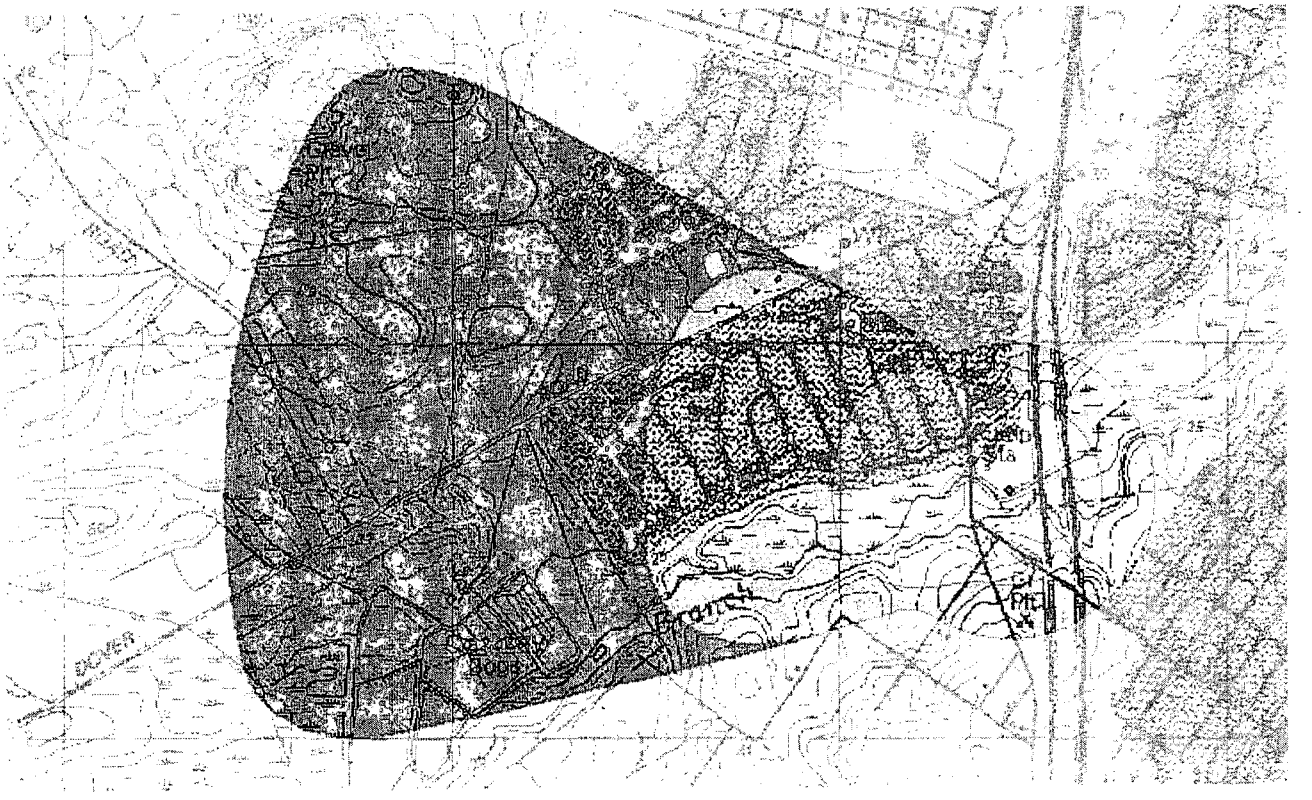
4 MILE WATER WITHDRAWAL APPORTIONMENT (Brunswick Aquifer)															
				0 TO 1/4		1/4 TO 1/2		1/2 TO 1		1 TO 2		2 TO 3		3 TO 4	
WATER COMPANY NAME	TOTAL NUMBER OF WELLS	TOTAL POPULATION SERVED	POPULATION PER WELL	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION
Elizabethtown Water DBA	129	609441	4724	0	0	12	56692	2	9449	0	0	5	23622	14	66141
Middlesex Water Company	31	90168	2909	0	0	0	0	0	0	6	17452	18	52356	7	20361
PRIVATE POTABLE WELLS					0		0		0		0		0		0
					0		56692		9449		17452		75977		86501

4 MILE WATER WITHDRAWAL APPORTIONMENT (AQUIFER B)															
				0 TO 1/4		1/4 TO 1/2		1/2 TO 1		1 TO 2		2 TO 3		3 TO 4	
WATER COMPANY NAME	TOTAL NUMBER OF WELLS	TOTAL POPULATION SERVED	POPULATION PER WELL	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION	# OF WELLS	POPULATION
PRIVATE POTABLE WELLS					0		0		0		0		0		0
					0		0		0		0		0		0

ATTACHMENT M

NEW JERSEY GEOLOGICAL SURVEY
OPEN-FILE REPORT OFR 03-1

GUIDELINES FOR DELINEATION OF WELL HEAD PROTECTION AREAS IN NEW JERSEY



New Jersey Department of Environmental Protection

STATE OF NEW JERSEY
James E. McGreevey, *Governor*

Department of Environmental Protection
Bradley M. Campbell, *Commissioner*

Land Use Management
Ernest P. Hahn, *Assistant Commissioner*

Geological Survey
Karl Muessig, *State Geologist*

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Department of Environmental Protection's mission is to assist the residents of New Jersey in preserving, sustaining, protecting and enhancing the environment to ensure the integration of high environmental quality, public health, and economic vitality.

NEW JERSEY GEOLOGICAL SURVEY

The mission of the New Jersey Geological Survey is to map, research, interpret and provide scientific information regarding the State's geology and ground-water resources. This information supports the regulatory and planning functions of the Department and other governmental agencies and provides the business community and public with the information necessary to address environmental concerns and make economic decisions.

For more information contact:

New Jersey Department of Environmental Protection

New Jersey Geological Survey
P.O. Box 427
Trenton, NJ 08625-0427
(609) 984-6587
http://www.state.nj.us/dep/njgs/

Water Supply Administration
Bureau of Safe Drinking Water
P.O. Box 426
Trenton, NJ 08625-0426
(609) 292-5550
http://www.state.nj.us/dep/watersupply

Cover illustration: An example of a WHPA is shown. The Well Head Protection Area is broken into three tiers; Tier 1, or the 2-year time of travel (TOT), is shown in light gray, Tier 2, or 5-year TOT, is shown in middle gray, and Tier 3, or the 12-year TOT, is shown in dark gray. Ground water movement is from left to right across the picture toward the pumping well near center of Tier 1.

New Jersey Geological Survey

Guidelines for Delineation of Well Head Protection Areas in New Jersey

Compiled by

Steven E. Spayd and Stephen W. Johnson

New Jersey Department of Environmental Protection
New Jersey Geological Survey
P.O. Box 427
Trenton, New Jersey 08625-0427
2003

Printed on recycled paper

CONVERSION FACTORS

multiply	by	to obtain
inch	25.4	millimeter
foot	0.3048	meter
mile	1.609	kilometer
gallons per minute	0.06308	liters per second
gallons per minute	192.5	cubic feet per day
gallons per day	0.000694	gallons per minute
foot per day	0.3048	meters per day

"The water that occurs below the surface of the land is invisible and relatively inaccessible and has consequently always possessed an aspect of mystery. What is the mode of its occurrence; what is its quantity; whither does it come; is it stationary or in motion? If in motion, what is its destination and its rate of movement, and what are the forces that propel it through the earth...? These are some of the questions that confront the hydrologists who endeavor to look below the surface. They are questions of almost infinite complexity, involving a great amount of physics and chemistry and almost the whole field of geology."

From Physics of the Earth-IX-Hydrology, page 385, Oscar E. Meinzer, U.S. Geological Survey, 1942.

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GUIDELINES FOR DELINEATION OF WELL HEAD PROTECTION AREAS IN NEW JERSEY

Introduction

Background

The 1986 Federal Safe Drinking Water Act Amendments (Section 1428, P.L. 93-523, 42 USC 300 et. seq.) direct all States to develop a Well Head Protection Program (WHPP) Plan for both public community (CWS) and public non-community (NCWS) water-supply wells. New Jersey's WHPP Plan was approved by the U.S. Environmental Protection Agency (EPA) in December 1991. A goal of the WHPP Plan is to prevent contamination of ground-water resources, which provide drinking water to roughly forty-two percent of New Jersey's population. The delineation of Well Head Protection Areas (WHPA's) is one component of the WHPP. The WHPA is the area from which a well draws its water within a specified time frame. Once delineated, these areas become a priority for efforts to prevent and clean up ground-water contamination. Other components of the WHPP Plan include pollution-source inventories, development and implementation of best management practices to protect ground water, land-use planning, and education to promote public awareness of each person's role in protecting our ground-water resources.

The Safe Drinking Water Act Amendments of 1996 (P.L. 104-182) established the need for each State to have a Source Water Assessment Program (SWAP). In New Jersey, source-water assessment areas for all public supply wells will be established by NJDEP using these WHPA delineation methods.

Public supply wells draw water from underground water sources known as aquifers. Aquifers are geologic units that are porous and permeable enough to hold and allow water to flow through them in quantities sufficient to supply wells. The water contained in these aquifers is called ground water. Ground water moves from points of high pressure (often high elevation) to points of lower pressure such as streams, springs, and pumping wells. When a well is pumping, nearby ground water flows toward it. The longer the well pumps, the greater is the distance from which water will flow through the aquifer to the pumping well. For example, pumping a typical community supply well in New Jersey's coastal plain for two years may draw ground water from 1,500 feet away. If the well continues to pump for twelve years, ground water may be drawn from about a mile upgradient of the well. The time it takes a given particle of ground water to flow to a pumping well is known as the time of travel (TOT). The TOT is directly related to the distance the water has to travel to arrive at the well once it starts pumping. However, for any given TOT, the distance will vary from well to well depending on the rate of pumping and aquifer characteristics such as the transmissivity, porosity, hydraulic gradient, and aquifer thickness. Each WHPA is divided into three sequential tiers based on the TOT component. The tiers are used to assess the relative risk of contamination to the well by placing a higher priority on pollution sources, prevention and remedies in the tiers closest to the wells.

Aquifers are recharged with water from precipitation that percolates through pervious land surfaces and becomes part of the flow of ground water. It is within the WHPA that land uses which introduce pollutants, are most likely to contaminate drinking water sources. Historically, land uses and commercial and industrial facilities and activities have been identified as major sources of ground-water contamination in New Jersey (NJ Water Quality Inventory Report, 1992). These include, but are not limited to: underground storage tanks, septic systems, surface spills, unsecured landfills, leaking drums, above ground storage tanks, road salt piles, and lagoons/surface impoundments.

Once WHPA's are delineated, potential pollution sources may be managed in relation to their location within the WHPA. In addition, protective land uses, such as preserved open space, may be established. In instances where a public supply well has already been contaminated, the WHPA provides investigators with an area in which to search for potential pollution sources and responsible parties.

Under SWAP, the Department has delineated WHPA's for the approximately 2,425 community water supply wells (CWS wells), and will be establishing WHPA's for the roughly 5,000 non-community water water supply wells (NCWS wells) in the near future.

Purpose and Scope

It is the purpose of these guidelines to establish the approved methods for delineation and submission of WHPA's in New Jersey. In accordance with SWAP, the Department will delineate WHPA's for all existing and new CWS and NCWS wells. Based upon their own needs, concerns or requirements for both CWS and NCWS wells, interested parties may perform WHPA delineations at an advanced level as defined later in this guidance.

These guidelines will be used by the Department as well as by outside parties interested in performing delineations. A WHPA delineation may be required as the result of Department regulations, or through a Department-approved remedial investigation or remedial-action work plans. Until such time that regulatory standards for WHPA delineations are established, it is the Department's intent that all public entities require WHPA's to be delineated pursuant to these guidelines.

The focus of this report is to establish the Department's approved methods for conducting delineations, detailing the minimum data requirements, delineation method selection, preferred hydrogeologic parameter and model selection. Use of the prescribed methods will allow interested parties to submit a WHPA delineation for Department review and approval. The report contains requirements for outside parties interested in submitting WHPA delineations to the Department.

Copies of the New Jersey Well Head Protection Program Plan are available from the Division of Watershed Management, P.O. Box 418, Trenton, NJ 08625, or by calling (609) 777-1053, or on the internet at: www.state.nj.us/dep/watersupply/swap.htm.

Delineation Impacts

People in New Jersey who obtain water from public supply wells will benefit by WHPA delineations. The source of their water will ultimately be better protected and preserved through the implementation of the WHPP and the SWAP. The WHPA delineations help the Department achieve several of its strategic goals including clean and plentiful drinking water for all of New Jersey's residents and the resulting reduction in risk to human health that comes with safe drinking water.

Those owning or operating properties containing potential or existing pollutant sources within a designated WHPA will also be affected. The WHPA will provide a clear understanding and justification for the special need of pollutant source control. The source controls instituted in these areas will range from public education to appropriate regulation, depending on the nature of the potential pollutant source, the risk of discharge, and the proximity to the well.

It is hoped that the preventive and voluntary nature of the WHPP and SWAP will encourage cooperative efforts at the county and municipal government levels to protect an essential and shared public resource, the underground water supply. The delineation of WHPA's will help communities understand the nature of their ground-water resources and provide protection for their drinking water supply. Geographic targeting through WHPA delineations enables decision-makers to designate drinking water sources within WHPA's a priority for ground-water protection efforts.

Ground water is vulnerable to contamination and once polluted, it is difficult and costly to clean up. Contaminated ground-water supplies are often abandoned and replaced by more costly surface-water supplies. The value of good-quality ground water can best be understood by comparing its cost with that of treated ground water or an alternative surface-water supply. In many areas, ground water is relatively inexpensive when compared to surface water. The EPA estimated that, in 1991, it cost about one hundred dollars to obtain a million gallons of untreated ground water. In areas of New Jersey where ground-water supplies were replaced with surface water, the cost increased to a thousand dollars or more. The EPA estimated that a switch from untreated ground water to a surface water supply in 1991 would result in a $340 increase per household per year (USEPA, 1991, page 13.). Given New Jersey's reliance on ground water as an integral source of drinking water, the potential annual cost resulting from ground-water contamination is hundreds of millions of dollars.

The costs of remediation or of developing replacement water sources is burdensome and in some cases may be prohibitive for local governments or utilities. Preventing ground-water pollution is clearly the most cost-effective approach to maintaining

ground-water resources. The Department's Source Water Assessment Plan (SWAP) emphasizes prevention as the first line of defense to protect New Jersey's ground-water resources. Well head protection is a unique solution that promotes the enlightened self-interest of communities who depend on ground water for their drinking water. The intent is to reduce the potential for contamination by both public and private parties, thereby requiring less treatment and remediation costs.

Public Comment

An earlier draft of this report was published as "Draft Guidance for Well Head Protection Area Delineations in New Jersey" (Spayd, 1998). The draft technical guidance was distributed to interested parties and posted on the Department's SWAP web page. Public comments were solicited at that time and considered in the development of this report.

Acknowledgements

The New Jersey Geological Survey (NJGS) compiled these guidelines with the assistance of the WHP and SWAP Technical Advisory Committees. Special thanks are due to Tom McKee, Bob Kecskes, Terri Romagna and Kim Cenno of the Division of Watershed Management; Judy Louis of the Division of Science, Research and Technology; Barker Hamill, Sandy Krietzman, and Pat Bono of the Bureau of Safe Drinking Water; Robert Nicholson and Eric Vowinkel of the U.S. Geological Survey (USGS); and Karl Muessig, Bob Canace, Jeff Hoffman, Jim Boyle, Laura Nicholson, Bill Mennel, Eric Roman, Ted Pallis, Joe Rich, Walt Marzulli, and Doug Rivedal of NJGS. Former Department employees Dan Van Abs and Emery Coppola also provided significant contributions. Participants in the SWAP Technical Advisory Committee included staff from the Department, EPA, USGS, water purveyors, environmental and watershed associations, as well as local and county health and planning organizations. Participants in the WHP Technical Advisory Committee included staff from:

New Jersey Department of Environmental Protection
Office of Environmental Planning
New Jersey Geological Survey
Bureau of Water Allocation
Bureau of Safe Drinking Water
Division of Science, Research and Technology
Division of Solid Waste Management
Bureau of Operational Ground Water Discharge Permits
Bureau of Underground Storage Tanks
Bureau of Environmental Evaluation and Risk Assessment
New Jersey Department of Agriculture
New Jersey Department of Transportation
New Jersey Pinelands Commission
Delaware River Basin Commission
U.S. Environmental Protection Agency
U.S. Natural Resources Conservation Service
U.S. Geological Survey

General Delineation Requirements

Delineation Tiers

A WHPA will consist of three tiers, each based on a time of travel to the well. The outer boundaries of these tiers will have the following times of travel:

Tier 1 = two years (730 days).
Tier 2 = five years (1,826 days).
Tier 3 = twelve years (4,383 days).

The portion of the zone of contribution designated as the WHPA is based upon the TOT of the ground water to a pumping well. The TOT's are based on the need to assess the relative risk of contamination to the well, allowing priority to sources that pose an imminent threat.

The TOT for the outer boundary of Tier 1 is two years. This TOT is based on findings that bacteria have polluted wells as far as a 170 day TOT from wells, and that viruses have survived in ground water for up to 270 days (Canter, Knox, and Fairchild, 1987; USEPA, 1987). Generally, pollution does not move in a uniform front, so that a TOT represents an average. Significant pollution may reach a well before the average TOT. In addition, once a pollution plume gets too close to a water-supply well, plume containment usually is not feasible without an impact on the yield of the well. The two-year TOT provides a reasonable margin of safety beyond the 170 and 270-day figures.

The boundary for Tier 2 is five years. The Department is not reasonably certain that it can ensure

containment of pollution from a known discharge or restoration of the aquifer at TOT's ranging from two to five years. The Department has significantly revised its procedures for pollution case management so that enforcement or public funding of remedies is expedited for cases which threaten or pollute water-supply wells. However, even with implementation of these procedural changes in WHPA's, a lag time between case identification and the initiation of effective remedies still exists. Selection of the five-year TOT was based on the "smearing" effect observed in pollution plumes (caused by adsorption/desorption and the variable rate of pollutant travel through pores), the acceleration of ground water once it comes close to a pumping well, complexity of ground water pollution cases and lag-time estimates for remediation given that approximately 40 percent of all pollution cases must be managed by the Department due to the lack of a cooperating responsible party.

Beyond Tier 2, the Department is reasonably sure that a viable pollution mitigation response is possible for significant, known discharges of pollutants. The purpose of Tier 3, then, is to ensure sufficient monitoring of potential pollution sources so that responses may be made. Theoretically, Tier 3 could extend to the boundaries of the complete zone of contribution. However, the WHP Technical Advisory Committee determined that such an extensive area is not needed in New Jersey. Minor pollutant sources sufficiently distant from it may not pose a significant risk to the well, due to attenuation and dilution. A preliminary analysis of pollution cases in seven counties indicated that a TOT of 10 to 15 years encompasses the full length of most pollution plumes identified (almost all are less than one mile, but many exceed 2,000 feet) (NJDEPE, 1991, page 21.). In addition, a rough analysis of dilution ratios suggests that a 10 to 15 year TOT would provide sufficient dilution and attenuation to minimize the risk of well pollution. It is clear that most sources outside of a TOT of 15 years are either too minor to be of special concern or are major enough to ensure that current Department regulations will protect the water supply. Most significant sources of future discharges, within the zone of contribution but far from the well, will be sufficiently regulated by the Department for Tier 3 and outside of Tier 3. Therefore, a TOT of 12 years was deemed sufficient.

Delineation Methods

A method of WHPA delineation should be selected from and be in accordance with the methods defined in the Approved Delineation Methods section of this report.

WHPA delineation methods, with the exception of the two Calculated Fixed Radius (CFR) methods, should be performed by a qualified ground-water professional.

If a well pumps from more than one aquifer, the WHPA delineation method applicable to the uppermost aquifer will be used with the full pumping rate assigned to the uppermost aquifer.

If a well draws water from a confined aquifer, and the vertical time of travel for ground water moving from the surface downward through the confining unit at the well or for the horizontal time of travel from the edge of the confining unit to the well exceeds 12 years, as determined by the Department, then all three tiers of the WHPA will be established as the 50-foot, owner-controlled zone mandated by Public Water System Construction Regulations (N.J.A.C. 7:10-11.1). For these wells, the land-surface area, where discharges affecting ground water may occur, is beyond Tier 3. The USGS has conducted a study for the Department, which included development of a method to evaluate a well's sensitivity to contamination (Storck, 1997). USGS determined that all wells in glacial and bedrock aquifers in New Jersey should be considered to be drawing water from the land surface within twelve years, unless site-specific data prove otherwise. For wells drawing water from coastal-plain aquifers, USGS determined that the specific location of the well screen and its relation to overlying confining units must be evaluated to determine if water recharging the aquifer reaches the well within 12 years.

A pre-application conference is strongly recommended for all applicants interested in using an advanced delineation method that is not defined in these guidelines. Confirmation or denial of the use of an alternative delineation method will be given by the Department in writing.

Approved Delineation Methods

The selection of appropriate delineation methods involved balancing several factors, for example: WHPP goals, the diverse hydrogeology in the State and the availability of data. Through the work of the WHP Technical Advisory Committee (comprised of technical experts from state and federal government), methods were identified and assessed that would define the zone of contribution of the well. Following A-5015, approved by the Legislature in its 1991 session, the Department will delineate WHPA's for all CWS wells. The WHP Technical Advisory Committee recognized at the beginning of the delineation discussion that it would not be possible, due to cost and staff constraints, to collect site-specific well and aquifer parameter data for each of the approximately 2,425 CWS wells in the State. It was determined that existing data including regional attributes would be used for Department WHPA delineations. The Department will perform its delineations under SWAP/WHPP within the Safe Drinking Water Permitting Program using, at a minimum, the combined model/CFR method on all existing CWS wells and on all new CWS wells. Where adequate hydrogeologic studies and models exist, and Department resources allow, the Department may perform advanced delineation(s).

The delineation method used for a well is dependent on the type of well, hydrogeologic setting for that well, and the availability and reliability of data. The hydrogeologic situation depends on the geology of the aquifer, and the presence of well interference effects, hydrologic boundaries, aquifer heterogeneities, and aquifer anisotropy. This section of the report identifies the acceptable methods with a differentiation made between CWS and NCWS wells.

The Federal mandates for the WHPP and SWAP require that States include NCWS wells in their program plan. In general, fewer well and aquifer parameters are available for NCWS wells due to the nature of the population they serve and a historical lack of reporting requirements. For these reasons, and time, and economic constraints, the Department will delineate WHPA's for all NCWS wells using the CFR Calculation Method. In recognition of the need to minimize the pollution risk to these wells, while considering the limited hydrogeologic expertise that may be available to the well owners to perform their own WHPA delineations, a matrix was developed from which a generic CFR could be determined (Table 1). This matrix was developed using ranges of pumping rates and aquifer thickness as well as an estimated effective porosity. The values in the matrix represent standard values rounded to the nearest ten feet.

Delineation Method Selection

The CFR matrix method is an acceptable method only for NCWS wells whose pumping rate does not exceed 70 gallons per minute.

The CFR calculation method is an acceptable method for NCWS wells at this time. This method will also be used for the CFR portion of any WHPA using the combined model/CFR method. In the future as resources permit, NCWS wells pumping 70 GPM or greater may be delineated by combined model/CFR method.

The combined model/CFR method is an acceptable method for all public water-supply wells. This is the minimum acceptable method for public community water wells (CWS).

The non-CFR model method, the three-dimensional model method, and advanced delineation model are acceptable methods for all public water-supply wells located in areas that have a detailed local and regional water table mapping available, and sufficient accurate data on aquifer recharge, well interference, hydrologic boundaries, aquifer heterogeneities, and aquifer anisotropy.

CFR Matrix Method

The CFR matrix method uses predetermined values given in table 1. The procedure to delineate a WHPA using this method will be as follows:

1. Select table 1a or 1b depending on the type of aquifer from which the well pumps:

a. Table 1a will be used for unconsolidated glacial and coastal-plain aquifers consisting of sand and gravel.

b. Table 1b will be used for all bedrock aquifers including those consisting of sandstone, conglomerate, shale, limestone, dolomite, granite, gneiss, diabase, and other sedimentary, igneous or metamorphic rocks.

2. Find the Tier 1 portion of the selected table, and in the left column of the table find the row with the range that includes the well's pumping rate.

3. In the top row of the table, find the column with the range that includes the well's aquifer thickness.

4. Select the Tier 1 CFR from where the pumping rate row and aquifer thickness column intersects.

5. Repeat paragraphs 2 through 4 above, for Tier 2 and Tier 3.

6. The CFR value for each tier will be used to define the radius of a circle, which will be centered on the well to complete the WHPA delineation. A map of the WHPA delineation, including all three tiers, will be drawn according to the delineation mapping requirements section.

CFR Calculation Method

The CFR calculation method will be used to generate the CFR values by using the following formula:

$$CFR = \sqrt{\frac{61.3Qt}{n_e b}}$$

where:

CFR = Calculated fixed radius in feet
Q = Pumping rate in gallons per minute
t = Time of travel in days (that is, 730, 1,826, or 4,383 days)
61.3 = Conversion factor [(1440 min/day)/(7.48 gal/cu ft)]/3.14
n_e = Effective porosity
b = Aquifer thickness in feet

This method requires the pumping rate, time of travel, effective porosity, and aquifer thickness, which must be selected in accordance with the Data Selection and Parameter Estimation section of this report. The calculation will be made for the appropriate time of travel for each tier. The CFR value for each tier will be used to define the radius of a circle, which will be centered on the well to complete the WHPA delineation. This method is conservative because it does not include recharge in the calculation. However, this was determined to be appropriate as the larger size of the CFR offsets inaccuracies due to the lack of site-specific data and use of the lowest level of delineation. A map of the WHPA delineation, including all three tiers, will be drawn according to the delineation mapping requirements section.

Table 1a. Calculated fixed radius in feet. Unconsolidated Glacial and Coastal Plain aquifers consisting of sand and gravel; effective porosity = 25%.

Tier 1, two year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	190	110	80	60	50	40
11-20	330	190	130	100	90	80
21-30	420	240	170	130	110	100
31-40	500	290	200	160	130	120
41-50	570	330	230	180	150	130
51-60	630	360	260	200	170	150
61-70	680	390	280	220	180	160
Tier 2, five year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	300	170	120	90	80	70
11-20	520	300	210	160	140	120
21-30	670	390	270	210	180	160
31-40	790	460	320	250	210	190
41-50	900	520	370	280	240	210
51-60	990	570	410	310	270	230
61-70	1080	620	440	340	290	250
Tier 3, twelve year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	460	270	190	150	120	110
11-20	800	460	330	250	210	190
21-30	1040	600	420	330	280	240
31-40	1230	710	500	390	330	290
41-50	1390	800	570	440	370	330
51-60	1540	890	630	490	410	360
61-70	1670	960	680	530	450	390

Table 1b. Calculated fixed radius matrix in feet for bedrock aquifers consisting of sandstone, conglomerate, shale, limestone, dolomite, granite, gniess, diabase, and other sedimentary, igneous and metamorphic rocks; effective porosity = 2%.

Tier 1, two year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	670	390	270	210	180	160
11-20	1160	670	470	370	310	270
21-30	1500	860	610	470	400	350
31-40	1770	1020	720	560	470	420
41-50	2010	1160	820	630	540	470
51-60	2220	1280	910	700	590	520
61-70	2410	1390	980	760	640	570
Tier 2, five year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	1060	610	430	330	280	250
11-20	1830	1060	750	580	490	430
21-30	2370	1370	970	750	630	560
31-40	2800	1620	1140	890	750	660
41-50	3170	1830	1300	1000	850	750
51-60	3510	2030	1430	1110	940	830
61-70	3810	2200	1560	1210	1020	900
Tier 3, twelve year time of travel Aquifer Thickness (feet)						
Pumping Rate (gpm)	1-50	51-100	101-200	201-300	301-400	401-500
<1-10	1640	950	670	520	440	390
11-20	2840	1640	1160	900	760	670
21-30	3670	2120	1500	1160	980	860
31-40	4340	2500	1770	1370	1160	1020
41-50	4920	2840	2010	1560	1310	1160
51-60	5440	3140	2220	1720	1450	1280
61-70	5910	3410	2410	1870	1580	1390

Combined Model/CFR Method

The combined model/CFR method was chosen as the minimum method for CWS wells, and will be used by the Department for WHPA delineations for CWS wells. This method was chosen based upon the Department's need to provide a low cost, relatively accurate estimate of the WHPA using available data on the characteristics of the well (pumping rate and depth) and the regional characteristics of the aquifer (hydraulic gradient direction and magnitude, transmissivity, anisotropy, effective porosity, thickness, and hydrologic boundaries) using the best available data.

The combined model/CFR method combines the CFR calculation method defined above with a two-dimensional ground-water flow model that properly accounts for hydraulic gradient, aquifer transmissivity, effective porosity, aquifer saturated thickness, aquifer anisotropy, pumping rate of the well, and time of travel.

The following steps will be taken:

1. The CFR for Tier 1 and Tier 2 will be calculated as described in the CFR calculation method. No CFR for Tier 3 is used in this method.

2. Determine the regional hydraulic gradient (see page 13).

   a. The hydraulic gradient magnitude and direction will be calculated from a regional water-table map, when available, over a distance from the well to one-mile upgradient of the well.

   b. When no satisfactory regional water table map is available, the hydraulic gradient magnitude may be estimated by multiplying the topographic gradient, calculated over a distance from the well to one-mile upgradient of the well, by 0.5. In some aquifers, especially bedrock aquifers, a reasonable estimate of the regional hydraulic gradient may not be possible. In these cases, the gradient may be set to zero.

3. Determine aquifer anisotropy. For some aquifers, a reasonable estimate of anisotropy may not be possible. In these cases the anisotropy ratio should be set to 1:1. (table 2.)

4. The ground-water flow model will be used to calculate the zone of contribution of the well for the times of travel established for Tier 1, Tier 2, and Tier 3.

5. The long axis of the calculated zone of contribution will be aligned with the regional ground-water flow direction as shown in figure 1.

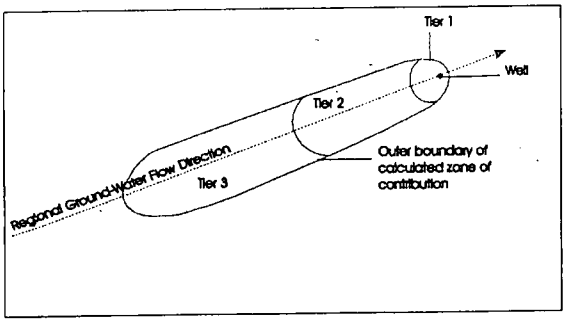

Figure 1 : Long axis of zone of contribution is aligned in the direction of the regional ground-water flow direction

6. A 20-degree angle of rotation, or an angle of rotation determined from site-specific data, will be applied to the model results. The results will be rotated, using the well as the pivot point, by the angle of rotation both clockwise and counter-clockwise, for each tier as shown in figure 2. For a discussion of "angle of rotation", see hydraulic gradient in the Data Selection and Parameter Estimation section of this report.

7. The CFR portion of the WHPA will be superimposed on the results of the ground-water model portion of the WHPA as shown in figure 3. The CFR component was added to account for potential inaccuracies in estimating well characteristics and properties of the aquifer, as well as to account for potential pumping interference effects which are common at public water systems in New Jersey.

8. The resulting outer boundary of the combined CFR and ground-water model portions will then be established for each tier as shown in figure 4.

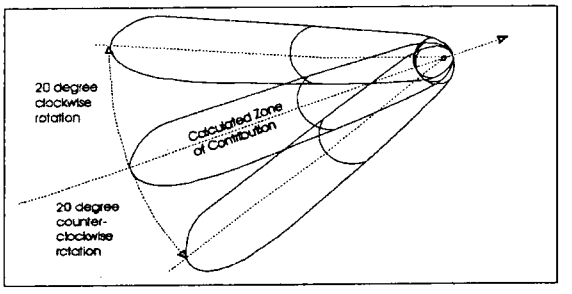

Figure 2. Clockwise and counter-clockwise 20-degree angle of rotation applied to calculated zone of contribution using the well as the pivot point.

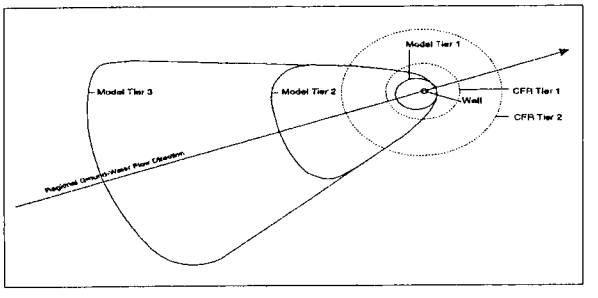

Figure 3. CFR portion of WHPA superimposed on the results of the ground-water model portion of the WHPA.

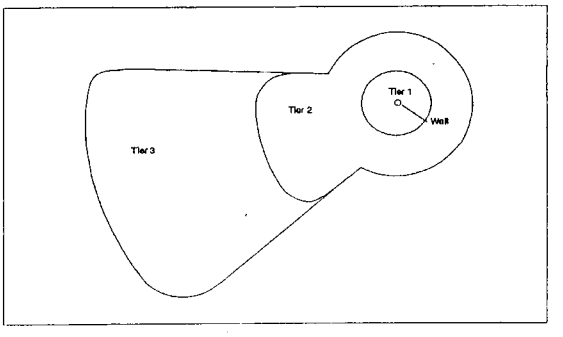

Figure 4. Resulting outer boundary of the combined CFR and model portions established for each tier of the WHPA delineation.

9. The outer boundary of the WHPA delineation may be truncated by appropriate hydrologic boundaries such as major rivers and aquifer boundaries. The resulting boundary will be the WHPA delineation for the well, which will be drawn according to the delineation mapping requirements section.

An example of the type of model the Department and others may use as part of this method is the RESSQC portion of the EPA WHPA Model, defined in the publication, "WHPA: A Modular Semi-Analytical Model for the Delineation of Well Head Protection Areas, March 1991." The model is available through the International Ground Water Modeling Center, Colorado School of Mines, Golden, Colorado, 80401-1887. The appropriate well pumping rate and aquifer values for saturated thickness, hydraulic conductivity, hydraulic gradient and magnitude, and effective porosity are critical to perform the model. Site-specific data, especially for hydraulic gradient, increase the level of model accuracy. Selection of these values is discussed in the Data Selection and Parameter Estimation section.

The NJGS has developed a computer program called "OUTPATH" that will apply the angle of rotation and aquifer anisotropy to outputs from the RESSQC version of the EPA WHPA model and create a file of the WHPA that can be incorporated into a geographic information system (GIS). It is available upon request from NJGS.

Non-CFR Model Method

When a regional water table map is available and aquifer recharge and well interference are accounted for in the model, no CFR is needed for the WHPA delineation. The non-CFR model method will use a two-dimensional ground-water flow model that properly accounts for hydraulic-head distribution, aquifer recharge, well interference, aquifer transmissivity, effective porosity, aquifer saturated thickness, pumping rate of the well, time of travel, aquifer anisotropy, hydrologic boundaries, and aquifer heterogeneities.

The following steps will be taken:

1. For advanced delineations requiring a model grid, the grid cells should be sized to allow accurate locations of pumping wells and the resulting ground-water flow paths. Grid cells containing pumping wells should be no greater than 100 feet in length or width. The maximum allowable length or width of a grid cell in any such model will be 500 feet. The maximum allowable thickness of any layer in the model will be 100 feet. The model should be subject to a sensitivity analysis, and be calibrated, in a manner acceptable to the Department, so that simulated results are acceptably close to field conditions.

2. The ground-water flow model will be used to calculate the zone of contribution of the well for the times of travel established for Tier 1, Tier 2, and Tier 3 as shown in figure 5.

3. A 20-degree angle of rotation, or an angle of rotation determined from site-specific data, will be applied to the model results. The results will be rotated, using the well as the pivot point, by the angle of ro-

tation of rotation both clockwise and counter-clockwise, for each tier as shown in figure 6.

4. The outer boundary of the WHPA delineation may be truncated by appropriate hydrologic boundaries if warranted. The resulting outer boundary of the rotated tiers will then be established as shown in figure 7. This will be the WHPA delineation for the well, which will be drawn according to the delineation mapping requirements section.

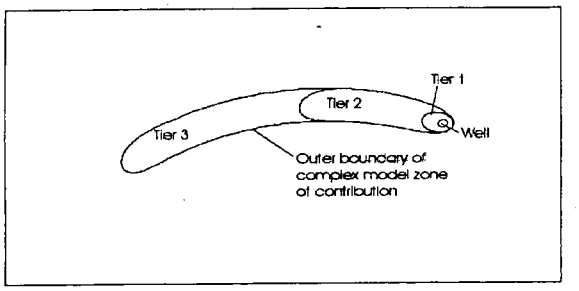

Figure 5. Non-CFR model method zone of contribution example.

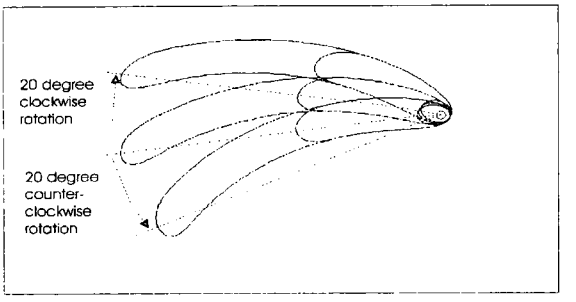

Figure 6. Clockwise and counter-clockwise 20-degree angle of rotation applied to non-CFR model method of contribution using the well as the pivot point.

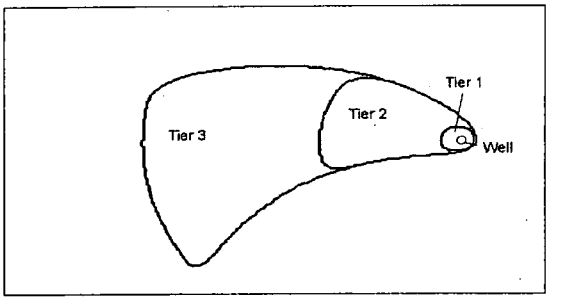

Figure 7. Outer boundaries of the rotated tiers are established as the WHPA delineation.

Three-Dimensional Model Method

The three-dimensional model method will use a three-dimensional, numerical ground-water flow model that properly accounts for hydraulic-head distribution, aquifer transmissivity, effective porosity, aquifer saturated thickness, pumping rate of the well, time of travel, partial penetration of the aquifer by the pumping well, well interference, hydrologic boundaries, aquifer recharge, aquifer heterogeneities, aquifer anisotropy, and any other relevant site-specific conditions, as appropriate for the area surrounding the well.

The following steps will be taken:

1. For advanced delineations requiring a model grid, the grid cells should be sized to allow accurate locations of pumping wells and the resulting ground-water flow paths. Grid cells containing pumping wells should be no greater than 100 feet in length or width. The maximum allowable length or width of a grid cell in any such model will be 500 feet. The maximum allowable thickness of any layer in the model will be 100 feet. A sensitivity analysis and calibration should be performed on the model, in a manner acceptable to the Department, so that simulated results are acceptably close to field conditions.

2. The ground-water flow model will be used to calculate the zone of contribution of the well for the times of travel established for Tier 1, Tier 2, and Tier 3 as shown in figure 5.

3. A 20-degree angle of rotation, or an angle of rotation determined from site-specific data, will be applied to the model results. The results will be rotated, using the well as the pivot point, by the angle of rotation both clockwise and counter-clockwise, for each tier as shown in figure 6. When using the three-dimensional model method, the rotated area should be truncated by appropriate hydrologic boundaries.

4. The resulting outer boundary of the rotated tiers will then be established as shown in figure 7. This will be the WHPA delineation for the well, which will be drawn according to the delineation mapping requirements section.

5. As an alternative to incorporating an angle of rotation when using the three-dimensional model method, a systematic evaluation of the model sensitivity to different combinations of model parameters, over appropriate ranges, may be conducted. This should include seasonal and spatial variation of appropriate model-input parameters. This will require delineating a WHPA for each acceptable combination. The outer limits of the resulting individual tier delineations will

constitute the WHPA, which will be drawn according to the Delineation Mapping Requirements section.

Advanced Delineations and WHPA Revisions

The delineation methods in this report reflect a hierarchy of increasing degree of modeling sophistication and increasing data requirements for the model used to delineate the WHPA. The principle behind this delineation hierarchy is to achieve an increasing degree of accuracy for the WHPA to the degree that methods and available data allow improved simulation of real hydrologic conditions.

The concept of performing advanced delineations is based on two principles. First, where data are available, an advanced delineation will likely provide a WHPA that is more accurate. Secondly, it is conceivable that an interested party, such as a water purveyor or a regulated potential or existing pollutant source, may wish to perform an advanced delineation to provide certainty regarding the application of a WHPA to a specific geographic location. Situations such as a well that receives a portion of its water from a nearby river that has good hydraulic connection to the aquifer, or a well field that is affected by well interference are also good candidates for an advanced delineation.

Because the Department will be performing WHPA delineations on all public water system wells, only delineations submitted by outside parties, which are completed at a level higher than that undertaken by the Department will be reviewed.

Interested parties who feel that a more advanced delineation for a NCWS well is required, and volunteer to perform a WHPA delineation, will use the same methods used for CWS well delineations.

The three-dimensional model method, which uses a numerical model, is the highest level of WHPA methods described in this report because it has the potential to incorporate and evaluate all components of the ground-water system around the pumping well. The Department does not necessarily consider numerical modeling superior to all other techniques for all applications. Numerical modeling is costly and data intensive. It may not automatically result in delineations that are measurably superior to less rigorous and less time-intensive analytical and semi-analytical methods, but, when done properly with good site-specific data, it may provide significant insights into the location of the WHPA.

For public water-supply wells with an existing WHPA delineation completed by the Department, the method selected for a revised delineation should meet the following requirements:

1. The method should be selected from the methods defined in this report and meet the selection requirements listed in the Delineation Method Selection section; and

2. The method should be a more advanced method than that used for the delineation of the existing WHPA, or must be an equivalent method used with more reliable site-specific data, as determined by the Department.

3. For advanced delineations requiring a model grid, the grid cells must be sized to allow accurate locations of pumping wells and the resulting ground-water flow paths. Grid cells containing pumping wells must be no greater than 100 feet in length or width. The maximum allowable length or width of a cell in any such model will be 500 feet. The maximum allowable thickness of any layer in the model will be 100 feet.

The Department intends to rely upon the American Society for Testing and Materials (ASTM) ground-water modeling standards listed in the resource section of this report. Ground-water professionals submitting WHPA's should follow these standards.

Data Selection and Parameter Estimation

The selection of values for hydraulic gradient, aquifer transmissivity, effective porosity, aquifer saturated thickness, pumping rate, well radius and anisotropy for all delineations must be in accordance with the order specified in table 2. For all WHPA methods, each variable listed in table 2 should be selected, when feasible, based on the first selection procedure given in table 2. If the data for the first selection are not available, the second selection should be used. If the data for the second selection are not available, the third selection should be used. Where values can not be determined from table 2 it may be obtained from the NJGS, from a published source, or other source acceptable to the Department.

Hydraulic Gradient

Hydraulic gradient has two components: magnitude and direction. The magnitude is measured as the slope of the water table, representing the change in elevation of the water table over a unit distance. The direction of the hydraulic gradient, often referred to as the "angle of ambient flow," is the azimuth of the maximum slope of the water table at a specific point.

The hydraulic gradient varies over space and time, and is affected by a variety of local and regional factors. For WHPA delineation purposes, the regional hydraulic gradient is the most useful.

For some delineation methods, the hydraulic gradient magnitude and direction will be calculated from a regional water-table map in the area upgradient of the well over a distance of one mile. The distance of one mile was selected as representative of a "regional" gradient, and is reasonable when compared to the calculated lengths of typical WHPA's representing hydrogeologic and operational conditions found in New Jersey.

In instances where it is difficult to calculate the hydraulic gradient within a one-mile span due to rapid changes in the water-table gradient or direction, or due to the location of hydrologic boundaries, the gradient magnitude and direction will be calculated over an appropriate distance of less than one mile.

In areas of the State where regional water-table maps do not exist, the magnitude and direction of the regional hydraulic gradient may be approximated based on topography, in the area upgradient of the well. This is determined by using the change in land surface elevation over a distance of one mile in the aquifer from which the well is pumping. This approach recognizes that the water table is usually a subdued replica of topography.

To quantify the relationship between topography and the water table, the NJGS observed topographic and hydraulic gradients in three drainage basins in the New Jersey Coastal Plain - the Great Egg Harbor, Mullica, and Toms River Basins.

Topographic and hydraulic gradients for selected intervals were compared for 128 line segments each approximately one mile in length.

A statistical analysis of these data suggested that a reasonable estimate of the hydraulic gradient in the Coastal Plain could be obtained by multiplying the topographic gradient by 0.5. Thus, a conversion factor of 0.5 will be used to convert a known topographic gradient, over a distance of one mile in the area upgradient of the well, to the hydraulic gradient magnitude, when lacking a regional water-table map. Research will continue to better define this relationship in other hydrogeologic regions of the State.

The hydraulic gradient direction or angle of ambient flow, is a very important parameter for a WHPA delineation. In certain hydrogeologic settings, especially those with a relatively steep hydraulic gradient, small errors in selection of the angle of ambient flow may cause the WHPA to be partially mislocated resulting in areas that are actually contributing water to the well to end up outside the WHPA. This would result in a misconception of the actual sources of water for a well.

Variability and uncertainty in the direction of ambient ground-water flow may arise from several factors, including:

- No regional water-table map is available and the angle of ambient flow is based on an estimation from the topography of the land surface.
- The regional water-table map used is based on a limited number of simultaneous water-level measurements or the observation points are separated by large distances.
- Subjectivity in interpreting field data to construct a water-table map results in non-unique water-level contours.
- Subjectivity in estimating direction of hydraulic gradient from water-table maps.
- Temporal variations in the angle of ambient flow exist as a result of spatial or seasonal differences.

Table 2. Selection of input values for WHPA delineation.

DELINEATION DATA VARIABLES	FIRST SELECTION	SECOND SELECTION	THIRD SELECTION
Hydraulic Gradient	Calculated from regional water-table contour map in area up-gradient of the well, with gradient magnitude and direction calculated over distance of one mile[1]. Delineation to include angle of rotation calculated from site-specific data.	Calculated from regional water-table contour map in area up-gradient of the well, with gradient magnitude and direction calculated over distance of one mile[1]. Delineation to include +/-20 degree angle of rotation.	Gradient magnitude and direction based on topographic gradient and 0.5 conversion factor, in area up-gradient of the well[1]. Delineation to include +/-20 degree angle of rotation.
Aquifer Transmissivity	Adequate hydrologic tests from wells located within the modeled area[2].	Calculated as the product of hydraulic conductivity and aquifer thickness[3].	Estimated based on published values for comparable aquifers.
Effective Porosity	Adequate hydrologic tests from wells located within the modeled area[2].	Estimated based on total porosity and/or specific yield data from the aquifer.	Obtained from effective porosity values provided for selective aquifer types in table 1.
Aquifer Saturated Thickness	**For unconsolidated aquifers**, the vertical distance between the water table and the first significant confining layer underlying the aquifer in which the well is screened. **For bedrock aquifers**, the vertical distance between the water table and the bottom of the well, but no greater than 500 feet.	**For unconsolidated aquifers**, the vertical distance between the water table and the bottom of the well. **For bedrock aquifers**, the length of open borehole for the well, but not greater than 500 feet.	**For unconsolidated aquifers**, the average or median aquifer thickness for wells in this aquifer. **For bedrock aquifers**, the average or median aquifer thickness for wells in this aquifer.
Pumping Rate	For wells in production for at least two years, use the method below: Maximum average annual pumping rate during the period of operation, up to and including the previous 12 years, from actual pumping data, plus a 25% safety factor, but not more than the pump capacity and not less than 40% of pump capacity.	Estimated based on the method below yielding the lowest pumping rate: Installed pump capacity for the well. Water allocation for the individual well, if available. The planned maximum average annual pumping rate, over the next 12 years, if justified by the well owner to the satisfaction of the Department.	Estimated based on the number of connections serviced by the well, or the estimated population serviced by the well, with per-capita consumption at 100 gallons per day per capita, and occupancy based on census data for the specific municipality where the well is located. If the number of connections or the estimated population is not known, the average or median pumping rate for this type of well will be used.
Well Radius	One half the finished diameter of the well screen or open borehole listed on the well record.	One half the finished diameter of the well screen or open borehole listed on well construction diagram.	If unknown, use the radius corresponding to the well's pump capacity rate listed in Driscoll, 1986., Table 13.1, Ground Water and Wells, second edition.
Anisotropy (Ratio) and Direction	Value based on adequate hydrogeologic tests and analyses of wells within modeled area.	Value based on published values for the aquifer.	1:1 for all aquifers except the following: Mesozoic sedimentary rocks 10:1; Paleozoic sedimentary rocks 3:1. Direction is bedding plane strike from a published geologic map.

For all WHP methods, the first selection must be used if the data are available; if not available, the second selection must be used; and so on.
When site-specific values can not be determined from table it may be requested from the New Jersey Geological Survey, P.O. Box 427, Trenton, NJ 08625, or obtained from a published source or other source acceptable to the Department.
[1] If it is difficult to calculate the hydraulic gradient over a distance of one mile, due to rapid changes in the water-table gradient or direction, or due to the location of hydrologic boundaries, then the hydraulic gradient magnitude and direction should be calculated over an appropriate distance less than one mile.
[2] Tests must be adequate to permit accurate definition of hydrologic characteristics of the aquifer to the satisfaction of the Department.
[3] When calculating transmissivity, the hydraulic conductivity should generally be the geometric mean value for the aquifer as shown in table 3.

in ground-water recharge or unidentified pumping nearby.

Temporal variations in the direction of ground-water flow can be quantified at locations with sufficient regional water-level monitoring data. Such changes have been documented in published reports and have been identified as a primary cause of transverse dispersion of contaminant plumes.

To quantify expected temporal variation in hydraulic gradient directions in New Jersey aquifers, the NJGS evaluated eight sites in New Jersey with sufficient water-level monitoring data. The selected sites covered a variety of New Jersey aquifers, including coastal plain, bedrock and glacial aquifers. Mean hydraulic gradient directions and seasonal variations from the mean were calculated for numerous sampling points. A statistical analysis of the data showed that the total variation in the azimuth of the flow direction was as much as 48 degrees (24 degrees on either side of the mean) over a two year period. Based on this analysis, a 16.4-degree range on either side of the mean hydraulic gradient direction would sufficiently account for the variability resulting from temporal variation in hydraulic gradient direction at 90% of the sites.

To account for the variability in the accuracy of the selected angle of ambient flow, arising from both temporal variation and the other potential uncertainties listed above, a range of 20 degrees on either side of the selected angle of ambient flow will be used in delineating WHPA's. The variability associated with the angle of ambient flow will be factored into the WHPA delineation process by rotating the delineated WHPA, with the well as the pivot point, 20 degrees in both a clockwise and counter-clockwise direction. The total rotation will be 40 degrees. The entire area encompassed by the rotation is included in the WHPA. However, the rotated area should be truncated by appropriate hydrologic boundaries when such data are available. This 20-degree "angle of rotation" will be used for all WHPA delineations unless sufficient site-specific data justify the use of a smaller or larger angle of rotation or if the three-dimensional model method is used with the alternative described in item 5 of the Three-Dimensional Model Method section (page 12). The angle can be changed if sufficient evidence, covering the seasonal fluctuation phenomena, is presented as part of the delineation.

Calculation of a site-specific angle of rotation requires a network of observation wells acceptable to the Department, with a minimum of one year of quarterly water-level data, water-table maps, and calculated hydraulic gradient directions. The calculated site-specific angle of rotation will be equal to the total variation in the azimuth of ground-water flow directions observed in the data.

The NJGS has developed a computer program called "OUTPATH" that will apply the angle of rotation to outputs from the RESSQC version of the EPA WHPA model and create a file of the WHPA that can be incorporated into a geographic information system (GIS). It is available upon request from NJGS.

Transmissivity

Transmissivity is a measure of the quantity of water that an aquifer can transmit over its saturated thickness per unit width (that is, one foot) and a hydraulic gradient of one. In mathematical terms, transmissivity is equal to the product of the thickness and hydraulic conductivity of the aquifer.

For WHPA calculation, the aquifer's transmissivity will be selected based on adequate hydrologic tests from wells located within the modeled area. In areas where transmissivity values are not readily available, transmissivity should generally be obtained by multiplying the aquifer thickness by the geometric mean of hydraulic conductivity values measured in the aquifer of interest. Currently available hydraulic conductivity and transmissivity values for New Jersey aquifers are listed in tables 3 and 4. Where no data for a given formation or aquifer are available in tables 3 and 4, published values for similar aquifers may be used.

Effective Porosity

Porosity is important in ground-water hydrology because it tells us the maximum amount of water that an aquifer can contain when it is saturated. Porosity is the ratio of the volume of void spaces (that is, pores, or the space not occupied by solid matter) to the total volume of an aquifer. Porosity is expressed as a decimal fraction or as a percentage, such as 0.25 or 25%. Porosity in unconsolidated sand and gravel aquifers is derived from the spaces between grains. Porosity in consolidated bedrock aquifers (limestone, marble, shale, sandstone, granite and gneiss for example) is largely derived from fractures such as joints, faults, and other tabular openings along bedding planes. Only a part of this water is available to supply a well. A portion of an aquifer's overall porosity will not release or transmit water, due to the water being held in some pores by capillary tension, or because of dead-end pore space which does not transmit water to a well. This portion or percentage of pore space is called specific retention, because water is retained there and not released. Some clays have high specific retention (up to 48%), while sand, gravel and consolidated rock have low specific reten-

tion (ranging from less than 1% in solid rock to 3% in sand) (Heath, 1983). The portion of porosity that drains or transmits water under influence of gravity or due to pumping a well is called effective porosity. This is the percentage of the aquifer's pore space or storage available to supply a pumping well. Effective porosity is largest for sand and gravel (around 25%) and usually lowest for clay, silt, and bedrock (around 2%).

Of all the parameters necessary for delineating WHPA's, porosity and effective porosity is the most difficult to measure and quantify. The preferred method for quantifying effective porosity requires hydrologic tests at the well site, including pumping tests, material analysis, and tracer testing. For example, the effective porosity may be calculated based on its relationship with hydraulic conductivity (K), hydraulic gradient (i), and ground water velocity (v), in accordance with Darcy's Law, such that:

$$(n_e) = [K * i] / v$$

At present, there are few published values of effective porosity for aquifers in New Jersey. Ongoing research being conducted by the USGS and the NJGS should begin to fill this data gap. When detailed site-specific data or detailed aquifer specific data of porosity are not available, an effective porosity value will be obtained from the values provided in table 1 of this report. The values in table 1 were determined based on review of worldwide values of effective porosity from published sources including groundwater tracer tests conducted in the field and laboratory tests of aquifer materials. Effective porosity values for unconsolidated aquifers such as glacial stratified drift, and coastal plain aquifers, have been estimated to be 25% (table 1a). Effective porosity values for the rock aquifers of New Jersey, such as those in shale, limestone, sandstone, gneiss and granite, have been estimated to be 2% (table 1b). Due to the current lack of site-specific data, in developing WHPA's for public supply wells, NJGS exclusively used the effective porosity values noted in table 1a and 1b.

Table 3. Summary of horizontal conductivity (k) values for geologic and hydrogeologic units in New Jersey as of January 2002.

Geologic Unit	Number of tests	Arithmetic mean (ft/d)	Minimum (ft/d)	Maximum (ft/d)	Median (ft/d)	Standard deviation
Outwash deposits	1	177.00	177.00	177.00		
Deltaic sediment	1	59.00	59.00	59.00		
Fluvial over lacustrine sediment	1	110.00	110.00	110.00		
Till (Quaternary)	1	32.00	32.00	32.00		
Till (late Wisconsinan)	1	142.90	142.90	142.90		
Stratified drift	5	158.20	55.00	215.00	188.00	65.73
Glaciolacustrine sand and gravel	1	267.00	267.00	267.00		
Glaciolacustrine sand and gravel (late Wisconsinan)	1	285.00	285.00	285.00		
Glaciolacustrine sand and gravel (Illinoian)	1	28.00	28.00	28.00		
Cohansey Formation	11	125.25	52.00	216.00	116.70	55.73
Cohansey & Kirkwood Formations	5	152.20	98.00	200.00	160.00	48.07
Kirkwood Formation - lower member (sand facies)	5	110.60	22.00	334.00	57.00	126.86
Kirkwood Formation	4	179.00	80.00	365.00	135.50	127.63
Shark River Formation - Toms River member	1	32.00	32.00	32.00		
Mount Laurel Formation	1	41.00	41.00	41.00		
Mount Laurel and Wenonah Formations	3	12.17	7.00	20.50	9.00	7.29
Magothy, Raritan, and Potomac Formations	1	13.00	13.00	13.00		
Magothy Formation	6	119.85	19.00	314.00	66.90	116.73
Raritan Formation	2	72.90	71.60	74.20	72.90	1.84
Potomac Formation	1	49.00	49.00	49.00		
Potomac Formation, Unit 3 (upper subsurface)	1	153.00	153.00	153.00		
Brunswick Group (Passaic Formation through Boonton Formation)	1	0.54	0.54	0.54		
Towaco Formation	1	5.00	5.00	5.00		
Passaic Formation	1	2.51	2.51	2.51		
Leithsville Formation	1	21.00	21.00	21.00		
Leithsville Formation and Hardyston quartzite, undivided	1	13.50	13.50	13.50		
late Proterozoic rocks, undifferentiated	1	0.05	0.05	0.05		
Hornblende granite	1	0.51	0.51	0.51		
Pyroxene granite	1	0.58	0.58	0.58		
Hydrogeologic unit	**Number of tests**	**Arithmetic mean (ft/d)**	**Minimum (ft/d)**	**Maximum (ft/d)**	**Media (ft/d)**	**Standard deviation**
continous or discontinous till	2	87.45	32.00	142.90	87.45	78.42
glacial sand and gravel	11	156.09	28.00	285.00	177.00	86.38
Cohansey aquifer	1	216.00	216.00	216.00		
Kirkwood-Cohansey water-table aquifer system	16	129.80	52.00	200.00	133.89	49.12
Rio Grande water-bearing zone	3	187.33	80.00	365.00	117.00	154.97
Atlantic City "800-foot" sand aquifer	5	110.60	22.00	334.00	57.00	126.86
Piney Point aquifer	1	32.00	32.00	32.00		
Mount Laurel-Wenonah aquifer	4	19.38	7.00	41.00	14.75	15.60
Potomac-Raritan-Magothy aquifer system	1	13.00	13.00	13.00		
upper Potomac-Raritan-Magothy aquifer	6	119.85	19.00	314.00	66.90	116.73
middle Potomac-Raritan-Magothy aquifer	2	72.90	71.60	74.20	72.90	1.84
lower Potomac-Raritan-Magothy aquifer	2	101.00	49.00	153.00	101.00	73.54
Brunswick aquifer	3	2.68	0.54	5.00	2.51	2.24
Jacksonburg limestone, Kittatinny Supergroup and Hardyston quartzite	2	17.25	13.50	21.00	17.25	5.30
igneous and metamorphic rocks	3	0.38	0.05	0.58	0.51	0.29
Not all aquifers in New Jersey are represented on table 3, because some have not been tested or analyzed.						

Table 4. Summary of transmissivity values for geologic and hydrogeologic units in New Jersey as of January 2002.

Geologic Unit	Number of tests	Arithmetic mean (ft^2/d)	Minimum (ft^2/d)	Maximum (ft^2/d)	Median (ft^2/d)	Standard deviation
Deltaic sediment	1	1070	1070	1070		
Fluvial over lacustrine sediment	1	7142	7142	7142		
Stratified drift	5	10528	6802	15444	10070	3133
Glaciolacustrine sand and gravel (late Wisconsinan)	1	17511	17511	17511		
Glaciolacustrine sand and gravel (Illinoian)	1	2642	2642	2642		
Cape May Formation	1	1312	1312	1312		
Cohansey Formation	11	8907	3102	18499	7794	4250
Cohansey & Kirkwood Formations	7	14264	6858	24902	11256	6999
Kirkwood Formation - lower member (sand facies)	6	7351	1792	16690	5847	5022
Kirkwood Formation	6	11630	2354	38475	7007	13560
Shark River Formation - Toms River member	2	1339	442	2235	1339	1268
Vincentown Formation	1	2286	2286	2286		
Mount Laurel Formation	1	2050	2050	2050		
Mount Laurel and Wenonah Formations	3	849	633	1232	683	332
Englishtown Formation	3	1122	426	1932	1008	759
Magothy, Raritan, and Potomac Formations	1	2593	2593	2593		
Magothy Formation	9	7302	1175	22956	3050	8492
Magothy Formation - Old Bridge Sand member	1	1710	1710	1710		
Raritan Formation	3	4621	2597	8307	2960	3197
Raritan Formation - Farrington Sand member	3	12103	2803	21599	11907	9400
Potomac Formation	1	1957	1957	1957		
Potomac Formation, Unit 3 (upper subsurface)	1	7969	7969	7969		
Brunswick Group (Passaic Formation through Boonton Formation)	1	136	136	136		
Towaco Formation	2	889	583	1195	889	433
Passaic Formation	8	573	45	1375	477	453
Rickenback dolomite	1	19254	19254	19254		
Rickenback dolomite - lower member	1	127	127	127		
Allentown dolomite	1	75	75	75		
Leithsville Formation	4	2993	1041	6498	2216	2425
Leithsville Formation - Walkill member	1	274	274	274		
Leithsville Formation and Hardyston quartzite, undivided	1	1184	1184	1184		
late Proterozoic rocks, unifferentiated	1	14	14	14		
Hornblende granite	1	100	100	100		
Pyroxene granite	2	110	36	183	110	104
Hypersthene-quartz-plagioclase gneiss	2	126	95	157	126	44
Hydrogeologic unit	**Number of tests**	**Arithmetic mean (ft^2/d)**	**Minimum (ft^2/d)**	**Maximum (ft^2/d)**	**Median (ft^2/d)**	**Standard deviation**
glacial sand and gravel	9	9001	1070	17511	5363	9560
Holly Beach water-bearing zone	1	1312	1312	1312		
Cohansey aquifer	1	12505	12505	12505		
Kirkwood-Cohansey water-table aquifer system	19	12023	3102	38475	8726	8796
Rio Grande water-bearing zone	3	8101	3994	10941	3643	9369
Atlantic City "800-foot" sand aquifer	7	6637	1792	16690	4958	5744
Piney Point aquifer	2	1339	442	2235	1268	1339
Vincentown aquifer	1	2286	2286	2286		
Mount Laurel-Wenonah aquifer	4	1150	633	2050	659	958
Englishtown aquifer system	3	1122	426	1932	759	1008
Potomac-Raritan-Magothy aquifer system	1	2593	2593	2593		

Table 4 (continued). Summary of transmissivity values for geologic and hydrogeologic units in New Jersey as of January 2002.

Geologic Unit	Number of tests	Arithmetic mean (ft^2/d)	Minimum (ft^2/d)	Maximum (ft^2/d)	Median (ft^2/d)	Standard deviation
upper Potomac-Raritan-Magothy aquifer	10	6743	1175	22956	8199	2655
middle Potomac-Raritan-Magothy aquifer	6	8362	2597	21599	7498	5634
lower Potomac-Raritan-Magothy aquifer	2	4963	1957	7969	4251	4963
Brunswick aquifer	11	591	45	1375	449	583
Jacksonburg limestone, Kittatinny Supergroup and Hardyston quartzite	9	3654	75	19254	6180	1184
igneous and metamorphic rocks	6	98	14	183	66	98

Not all aquifers in New Jersey are represented on this table, because some have not been tested and analyzed.

Aquifer Thickness

The thickness of an aquifer is defined as the vertical distance between its upper and lower physical boundaries. Determining aquifer thickness for purposes of calculating a WHPA, then, requires determining the locations of the upper and lower boundaries of the aquifer.

Because well head protection is primarily concerned with travel times in water-table aquifers, the water table constitutes the upper boundary of the aquifer. Using well logs or other site-specific information, the lower boundary of a water-table aquifer is described by the first significant confining unit underlying the aquifer. The degree to which this lower boundary can be defined will differ for unconsolidated granular aquifers and bedrock aquifers. For unconsolidated aquifers, the first significant confining layer underlying the pumping well will usually consist of a significant stratigraphic layer consisting of silt and/or clay, or in the case of glacial valley-fill aquifers, relatively impervious bedrock underlying the aquifer. When site-specific data on the location of confining units are not available, the NJGS can be contacted for the best available data in the area, or published sources such as the "Hydrogeologic Framework of the New Jersey Coastal Plain" (Zapecza, 1989) may be used. Therefore, aquifer thickness in unconsolidated aquifers will be the calculated vertical distance between the water table and the first significant confining layer underlying the well.

In bedrock aquifers, the bottom of the aquifer is not so easily described. The lower boundary of a bedrock aquifer coincides with the depth at which water-bearing fractures cease to occur, or with an underlying impervious bedrock stratum. Since information on the depth to which fractures occur is not always readily available, for purposes of calculating WHPA's, the lower boundary of bedrock aquifers will be defined as the depth of the open well borehole. A limit of 500 feet will be applied in assigning the thickness of bedrock aquifers. This limitation is generally consistent with data on well depths and occurrence of water-bearing fractures of wells in New Jersey. In bedrock aquifers, aquifer thickness will be the measured vertical distance between the water table and the bottom of the open borehole, with total aquifer thickness not exceeding 500 feet.

Where insufficient geologic and/or hydrogeologic data exits, aquifer thickness will be estimated using the methods listed in table 2 of this report, which are described below. Preference is given to methods that come closest to approximating the true aquifer thickness. For example, in unconsolidated aquifers the second option for assigning aquifer thickness will be the measured or published vertical distance between the water table and the bottom of the well. For bedrock aquifers, the length of the open borehole may be used to define aquifer thickness. Where information on a well is scarce, aquifer thickness will be defined as the average or median aquifer thickness from wells with known aquifer thickness in the same aquifer. See table 5 for average well depth for selected aquifers in New Jersey.

Table 5. Average depth of unconfined, public-supply wells in selected aquifers.

Aquifer Name	Number of Public Supply Wells	Average Depth (in feet)
Glacial Sand and gravel	252	100
Holly Beach water bearing zone	12	60
Kirkwood-Cohansey	433	120
Vincentown	8	130
Upper Potomac Raritan Magothy (PRM)	60	100
Middle PRM	54	230
Lower PRM	62	210
Brunswick	400	330
Basalt (Jurassic)	15	300
Stockton	33	340
Rocks of the Green Pond Mtn. Region, Kittatiny Mtn., and Minisink Valley	20	250
Martinsburg and Jutland Sequence	9	310
Jacksonburg Limestone, Kittatiny Supergroup and Hardyston Quartzite	72	280
Igneous and Metamorphic Rocks	212	310

Pumping Rate

The pumping rate is a measure of the quantity of water withdrawn, or expected to be withdrawn, from a well over a given time period. Pumping rate is usually expressed as gallons per minute, million gallons per day, or cubic feet per day.

The first step in selecting the pumping rates will be to determine if the well has been in production for at least two years, and if withdrawal data for the well are available in the Site Specific Water Use Data System maintained by the N. J. Geological Survey. If data are available, the pumping rate will be based on the preferred selection method which requires an evaluation of existing data for the well's period of operation, up to and including the previous 12 years. The 12-year time frame was selected based on the 12-year Time of Travel for Tier 3 and the availability of accurate historical pumping data. The following steps will be taken:

1) For each year of data, the total withdrawal will be determined;

2) An average annual pumping rate will be determined for each year's data by dividing the total withdrawal, in each year, by the number of minutes in a year (525,600).

3) The average annual pumping rate from the year with the highest average annual pumping rate will be selected as the maximum average annual pumping rate;

4) The maximum average annual pumping rate will be increased by a safety factor equal to 25% of the maximum average annual pumping rate;

5) If the maximum average annual pumping rate plus the safety factor results in a value that is greater than 40% of the well's pump capacity, then it will be used as the pumping rate in the delineation of the WHPA. If the maximum average annual pumping rate plus the safety factor results in a value that is less than 40% of the well's pump capacity, then 40% of pump capacity will be used as the value for pumping rate in the delineation of the WHPA.

6) If the maximum average annual pumping rate plus the safety factor results in a value that is greater than the well's pump capacity, then the pump capacity value or the maximum average annual pumping rate (without the safety factor), whichever is greater, will be used as the value for pumping rate in the delineation of the WHPA.

If the well is new, has not been in production for at least two years, or does not have actual withdrawal data available, the pumping rates will be selected from the following method yielding the lowest pumping rate:

1) Installed pump capacity for the well.

2) Permitted allocation of water for the individual well, if available.

3) The planned maximum average annual pumping rate, over the next 12 years, if justified by the well owner to the satisfaction of the Department.

If the data are insufficient to obtain pumping rates from the above described methods, the pumping rates will be estimated based on the number of connections or the estimated population serviced by the well, with per-capita consumption at 100 gallons per-capita per day and occupancy based on census data for the municipality in which the well is located.

If the number of connections or the estimated population is not known, an average or median pumping rate for this type of well will be used.

Well Radius

Some delineation methods require a value for well radius. Well radius is one half the finished diameter of the well screen or open borehole extending over the water producing interval of the well. The well record is the preferred source for obtaining this value. In instances where the well record does not exist, well radius will be obtained from the well construction diagram of the well. If neither of these two sources exist, well radius will be selected based on the well's pump capacity in accordance with Ground Water And Wells, table 13.1, "Recommended Well Diameters for Various Pumping Rates". If the pump capacity is not available either, then the pumping rate used in the delineation will be used to select the well radius using Ground Water and Wells, table 13.1 (Driscoll, 1986).

Anisotropy

Anisotropy refers to the directionally dependent movement of ground water in an aquifer. Anisotropy arises from the orientation and spatial distribution of conductive features such as fractures, solution openings, and primary porosity (intergranular) within the aquifer. In the case of New Jersey's bedrock aquifers, numerous aquifer tests and ground-water contaminant studies demonstrate anisotropic ground-water movement (Herpers and Barksdale, 1951, Nichols, 1968, Vecchioli, 1969, Spayd, 1986, USGS, 1997, and Nicholson and Watt, 1998). These studies have described anisotropic behavior in bedrock with ground-water flowing preferentially in the direction of bedding strike.

Based on these findings, it is reasonable to expect PCWS wells to exert greater impact and more extensive capture of ground water in the direction of bedding strike. For all WHPA's located in Paleozoic and Mesozoic sedimentary rock aquifers, NJGS assigned preferential flow direction and an anisotropy ratio. In most cases, the preferential flow direction is bedding strike and in a few cases, the preferential direction is the strike of a major fault from which the well appears to be obtaining water. The strike of bedding and faults were taken from published geologic maps. For the Paleozoic bedrock aquifers, an anisotropy ratio of 3:1 was used and in the Mesozoic sedimentary rock aquifers, the assigned anisotropy ratio was 10:1. Anisotropy ratio is the ratio of the aquifers greatest transmissivity (parallel to the preferred flow direction) to the least transmissivity (perpendicular to the preferred flow direction)

Submission of Delineations

Any person interested in submitting a WHPA to the Department will be required to include the following information:

1. Applicant name, address and telephone number.

2. Well owner name, address, and telephone number.

3. Person(s) performing the delineation and their professional qualifications, company names, address and telephone number.

4. Department permit numbers including, where applicable, the public water system identification number (PWSID), State well permit number, water allocation permit number, well and well-field name (if used), and water use registration number.

5. The WHPA delineations should be submitted in digital format compatible with the Department's GIS and in accordance with the Department's Digital Data Standards. These standards are found on the web at the following address: www.state.nj.us/dep/gis. Conformance with the digital standards will ensure positional accuracy and compatibility to the NJDEP GIS system. WHPA's are stored and managed on this system. In addition, the applicant may submit a mylar overlay of the orthophoto quadrangle map(s) at a scale of 1:24,000 or 1:12,000 showing the well location, well permit number clearly labeled, and the three tiers of the WHPA. The overlay must be drawn in accordance with the delineation mapping requirements section and the digital data standards above.

6. Additional mylar overlays when submited shall be referenced to the map required in item number 5 above to clearly show any physical features, water level elevations and contours, hydrologic boundaries, model grid, and all other wells or data points in the area used in determining the WHPA, as applicable. The overlays will be drawn in accordance with the delineation mapping requirements section.

7. Date of well construction, record of the well's construction, depth of the well, well screen or open-hole location, and other well and aquifer attributes as required for the delineation process, including the method used to locate the well. Sources of information must be documented. Parameters should be reported in consistent units, English or metric, and should be those commonly reported in scientific literature, and identified within the report.

8. All data, equations, derived values, and name of any models used for the delineation process must be included in the submission via electronic media compatible to the Department's GIS and digital data standards referenced above

.

The WHPA delineation data should be sent to the Bureau of Safe Drinking Water, P.O. Box 426, Trenton, NJ 08625.

Delineations, which are completed by the Department, will be submitted for public review within the Department's SWAP Program.
The Department will maintain and make available to the public the WHPA delineations. The Department intends to make the maps available to the public in a digital form, in conformance with the Department's GIS and showing, at a minimum, the well location, well permit number and the three tiers of the WHPA delineation. They are available on the web at: http://www.state.nj.us/dep/njgs/.

Delineation Mapping Requirements

The requirement to submit a mapped WHPA pertains only to those parties volunteering to perform a delineation outside of the Safe Drinking Water permitting process. The Department will perform delineations on all public wells. This section is designed to provide easy review of submitted material while maintaining an accuracy standard of plus or minus 50 feet. The recommended method for submitting WHPA delineations is a digital format compatible with the Department's GIS and Digital Data Standards. The digital version may be accompanied by a hard copy on mylar. Mylar provides the best medium for mapping in terms of accuracy, media stability, and for the purpose of review for an overlay. Therefore, the hard copy, if submitted, of the WHPA delineation is required on a mylar medium.

The maps required for the delineation, along with the data, will speed the review process. It is anticipated that all WHPA delineations along with their pertinent attributes will be placed into a computer database and transferred to the GIS. Submitted data will be reviewed for inconsistencies. Therefore, it is important that data including the WHPA delineation be received in digital format. Digital data should meet the Department's Mapping and Digital Data Standards (NJDEP, 1998). This will facilitate Department review and placement into the Department's GIS.

Well-location accuracy is essential to the delineation process. Well-location error may cause areas to be inappropriately placed under stricter controls than necessary, or conversely to not be included in the WHPA when they should. This required the Department to determine which available method or methods would provide the best accuracy. Methods in which the best accuracy could be obtained were assessed with consideration given to the cost of determining the well location and a reasonable level of technology, which would provide the best accuracy. Two methods were determined to provide an accuracy of plus or minus 50 feet or less. These are:

1) Global Positioning System = with a maximum error of approximately 40 feet to a minimum of three feet, using differential correction of field data.

2) Surveying location to the tenth of a second = 12.8 feet or other surveying technique which provides results within the accuracy limit.

The outer boundary line width of the WHPA corresponds to approximately 24 feet on the ground, using a ball point pen on paper at a scale of 1:24,000. It was decided based on best available technology, that this line would represent the boundary line of the WHPA. Due to the resolution of the well location, WHPA delineations are considered to have an accuracy of plus or minus 50 feet in any direction from the mapped location. In considering all the locational limitations, it was decided that any pollutant source located within or on the boundary of the WHPA will be assumed to be located inside of the WHPA, unless shown otherwise through more accurate well location, WHPA delineation or mapping technique.

The Department has field-located all existing CWS wells, using GPS, as part of its WHPA delineation process. NCWS wells have been field located mostly by the counties and New Jersey Water Association using GPS methods as well.

All maps and digital information must be referenced to the NAD83 geodetic datum.

All maps should have a minimum of four reference points corresponding to the quadrangle tic marks. The coordinates for each tic should be listed by the appropriate tic mark and should be in New Jersey State Plane Feet. Tic marks should be referenced to a mylar orthophoto quadrangle map at a 1:24,000 or 1:12,000 scale. Proper identification for the base map should be provided in the lower right hand corner of the WHPA delineation map.

Maps should not be crowded and care should be taken not to obscure the clarity of data or any features.

Information from other sources should be accurately transferred to either the WHPA mylar or the accompanying features map.

When WHPA delineation is submitted on mylar, delineations should be made with a standard drafting/technical pen producing a line width of no greater than 0.02 inches. In all cases, the well symbols, drafted lines and points should bisect the feature as seen on the base map and must be within 50 feet of its true location.

The name and affiliation of the preparer of the map, the date of preparation, the scale or scales employed, a north arrow, and the source of data used should be stated in a legend block on each map.

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Glossary

Applicant- A person or persons not affiliated with the Department of Environmental Protection who submits or intends to submit a Well Head Protection Area delineation for review and approval.

Anisotropy- The condition of aquifer properties that vary by direction.

Aquifer- A saturated geologic formation, group of formations, or part of a formation which is sufficiently permeable to transmit water to a pumping well or spring in usable and economic quantities. The water table of an unconfined aquifer may vary over time; "aquifer" applies to the full-saturated zone at any time.

Calculated fixed radius (CFR) -The method of describing an aquifer volume around a well in plan view (mapped on the land surface) by a cylinder, using the pumping rate of a well and the storage of water in an aquifer, over a specific pumping time, such that the ground water within the cylinder equals the volume of water pumped by the well.

Confined aquifer- An aquifer which contains ground water under pressure between or below confining unit(s) so that the water surface rises above the top of the aquifer in a tightly-cased well which derives its water from the aquifer.

Confining unit – A body of relatively impermeable material that is above or below one or more aquifers, restricting the flow of water to or from an aquifer or aquifers.

Department – The New Jersey Department of Environmental Protection.

Ground water - The portion of water beneath the land surface that is within the saturated zone.

Hydrologic boundary - Hydrologic or geologic features which form a deterrent to ground-water flow, intercept ground-water flow, or provide a large, continuous source of ground-water flow. These boundaries may include but are not limited to drainage divides, geologic formations, geologic structures, and surface water bodies.

Community water system (CWS) - A public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Non-community water system (NCWS) -a public water system that is not a CWS and which serves at least 15 service connections or regularly serves at least 25 individuals more than 60 days of the year.

Public water system - A system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals.

Qualified ground-water professional – Any person who has received a baccalaureate or post-graduate degree in hydrogeology, geohydrology, geology, engineering or soil science and has five years of appropriate professional experience in ground-water hydrology. This definition has been modified from the final USEPA municipal solid waste landfill rules published in the Federal Register, October 9, 1991 [40 CFR Section 258.50(f)]. This term has been so defined to focus on the appropriate education and professional experience relevant to the aspects of ground-water modeling required to perform zone of contribution analysis for water-supply wells. Applicants submitting advanced delineations requiring ground-water modeling and ground-water professionals are recommended to submit evidence of their professional credentials.

Regional hydraulic gradient – The change in head, per unit of distance, in a specified direction, within a specified region.

Saturated zone – The subsurface zone in which all the subsurface pores in the rock or soil are filled with water at a pressure greater than or equal to atmospheric.

SWAP - Source Water Assessment Program established and implemented under 1996 Amendments to federal Safe Drinking Water Act (P.L.104-182) and described in the USEPA approved New Jersey Source Water Assessment Program Plan, November 1999.

Time of travel (TOT) - The average time that particles of water will take to travel in the saturated zone from a given point to a pumping well.

Unconfined aquifer - An aquifer in which the water table forms the upper boundary and a confining unit forms the lower boundary.

Water table - The top surface of the saturated zone in an unconfined aquifer, which is under atmospheric pressure.

Well head – The well borehole and related equipment.

Well Head Protection Area (WHPA) - An aquifer area described in plan view around a well, from within which ground water is reasonably likely to flow to the well and through which ground-water pollution, if it occurs, is reasonably likely to pose a significant threat to the water quality of the well. The WHPA is delimited by the use of a time-of-travel, and hydrologic boundaries, and is further subdivided by multiple times of travel.

WHP - Well head protection.

WHPP – The Well Head Protection Program established pursuant to Section 1428 of the Federal Safe Drinking Water Act, P.L. 93-523, 42 USC 300 et. seq. and described within the New Jersey Well Head Protection Program Plan (NJDEP, 1991) and subsequent documents.

Zone of contribution – The portion of an aquifer surrounding a pumping well that encompasses all areas or features that supply ground water or ground-water recharge to the well over time.

ATTACHMENT N

TABLE 1

NETHERWOOD WELLFIELD HISTORICAL VOC LEVELS(1)

Well No.	Trichlorethylene No. of Samples(2)	Trichlorethylene Range	Trichlorethylene Average	1,1,1-Trichloroethane Range	1,1,1-Trichloroethane Average	Tetrachloroethylene Range	Tetrachloroethylene Average
1	4	8-20	15	1-6	4	8-26	20
2	2	6-8	7	4-9	7	13	13
3	2	3-7	5	5-36	21	16-31	24
4	7	<1-6	3	3-144	60	<2-14	<7
5	3	3-9	5	30-130	68	17-21	19
6	3	5-10	15	4-35	15	18-35	24
7	4	<1-7	3	6-12	9	6-12	10
8	2	8-85	47	<1	<1	<2-2	<2
9	6	6-330	112	<1	<1	<1-2	<2
10	3	<1-6	4	40-108	65	10-15	13
11	4	5-250	164	<1-8	3	4-10	6
4 RNG	2	<1	<1	2-12	7	2-4	3
Composite	21	<1-68	31	<1-35	21	<1-22	15

Notes:

1. All concentrations in ug/L.

2. Individual well samples taken from July 22, 1982 to December 24, 1983. Composite samples taken from December 4, 1981 to December 24, 1983.

ATTACHMENT O

NETHERWOOD PLANT INFLUE	RAW	Collected 01/08/08

Report Details

Sample Number: *CM05639* *Sample Status:* *REPORT QUEUE*

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08 17:55
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08 17:55
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	01/10/08 17:55
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	0.7	ug/l	VT	01/10/08 17:55
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	01/10/08 17:55
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	01/10/08 17:55
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08 17:55
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08 17:55
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	01/10/08 17:55
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	01/10/08 17:55
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	VT	01/10/08 17:55
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	01/10/08 17:55
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	2.8	ug/l	VT	01/10/08 17:55
	N3								
	ZZ								
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	01/10/08 17:55
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	01/10/08 17:55
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	01/10/08 17:55
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	01/10/08 17:55
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	01/10/08 17:55
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	18.5	ug/l	VT	01/10/08 17:55
	N3								
	ZZ								
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08 17:55
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	01/10/08 17:55
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	01/10/08 17:55
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	01/10/08 17:55
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	01/10/08 17:55
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	01/10/08 17:55
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08 17:55

Analyte Count: 26

NETHERWOOD PLANT EFFLUE | EFF | Collected 01/08/08

Report Details

Sample Number: CM05643 *Sample Status:* REPORT QUEUE

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time	
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08	18:28
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08	18:28
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	01/10/08	18:28
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	ND	ug/l	VT	01/10/08	18:28
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	01/10/08	18:28
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	01/10/08	18:28
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08	18:28
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08	18:28
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	01/10/08	18:28
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	01/10/08	18:28
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	VT	01/10/08	18:28
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	01/10/08	18:28
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08	18:28
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	01/10/08	18:28
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	01/10/08	18:28
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	01/10/08	18:28
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	01/10/08	18:28
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	01/10/08	18:28
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08	18:28
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	01/10/08	18:28
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	01/10/08	18:28
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	01/10/08	18:28
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	01/10/08	18:28
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	01/10/08	18:28
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	01/10/08	18:28
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	01/10/08	18:28

Analyte Count: 26

2008 07122021 NJ 123 A

Starting Sample: CM05643
Report Date: 01/14/08

NETHERWOOD PLANT INFLUE	RAW	Collected 02/08/08

Report Details

Sample Number: *CM07667* *Sample Status:* *REPORT QUEUE*

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08 19:12
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08 19:12
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	02/13/08 19:12
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	0.6	ug/l	VT	02/13/08 19:12
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	02/13/08 19:12
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	02/13/08 19:12
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08 19:12
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08 19:12
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	02/13/08 19:12
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	02/13/08 19:12
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	VT	02/13/08 19:12
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	02/13/08 19:12
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	2.5	ug/l	VT	02/13/08 19:12
	N3								
	ZZ								
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	02/13/08 19:12
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	02/13/08 19:12
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	02/13/08 19:12
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	02/13/08 19:12
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	02/13/08 19:12
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	15.8	ug/l	VT	02/13/08 19:12
	N3								
	ZZ								
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08 19:12
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	02/13/08 19:12
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	02/13/08 19:12
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	02/13/08 19:12
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	02/13/08 19:12
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	02/13/08 19:12
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08 19:12

Analyte Count: 26

NETHERWOOD PLANT EFFLUE	EFF	Collected 02/08/08

Report Details

Sample Number: *CM07671* *Sample Status:* *REPORT QUEUE*

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time	
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08	19:45
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08	19:45
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	02/13/08	19:45
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	ND	ug/l	VT	02/13/08	19:45
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	02/13/08	19:45
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	02/13/08	19:45
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08	19:45
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08	19:45
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	02/13/08	19:45
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	02/13/08	19:45
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	VT	02/13/08	19:45
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	02/13/08	19:45
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08	19:45
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	02/13/08	19:45
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	02/13/08	19:45
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	02/13/08	19:45
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	02/13/08	19:45
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	02/13/08	19:45
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08	19:45
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	02/13/08	19:45
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	02/13/08	19:45
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	02/13/08	19:45
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	02/13/08	19:45
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	02/13/08	19:45
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	02/13/08	19:45
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	02/13/08	19:45

Analyte Count: 26

2008 08010529 NJ 133 A

Starting Sample: CM07671
Report Date: 02/19/08

NETHERWOOD PLANT INFLUE	RAW	Collected 03/07/08

Report Details

Sample Number: *CM13122* *Sample Status:* *REPORT QUEUE*

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08 16:05
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08 16:05
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	03/14/08 16:05
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	0.9	ug/l	VT	03/14/08 16:05
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	03/14/08 16:05
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	03/14/08 16:05
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08 16:05
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08 16:05
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	03/14/08 16:05
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	03/14/08 16:05
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	VT	03/14/08 16:05
	V13								
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	03/14/08 16:05
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	2.1	ug/l	VT	03/14/08 16:05
	N3								
	ZZ								
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	03/14/08 16:05
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	03/14/08 16:05
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	03/14/08 16:05
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	03/14/08 16:05
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	03/14/08 16:05
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	19.2	ug/l	VT	03/14/08 16:05
	N3								
	ZZ								
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08 16:05
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	03/14/08 16:05
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	03/14/08 16:05
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	03/14/08 16:05
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	03/14/08 16:05
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	03/14/08 16:05
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08 16:05

Analyte Count: 26

2008 08012574 NJ 123 A

Starting Sample: CM13122
Report Date: 04/08/08

NETHERWOOD PLANT EFFLUE | EFF | Collected 03/07/08

Report Details

Sample Number: CM13126 *Sample Status:* REPORT QUEUE

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time	
BENZENE		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08	15:32
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08	15:32
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	VT	03/14/08	15:32
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	ND	ug/l	VT	03/14/08	15:32
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	VT	03/14/08	15:32
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	VT	03/14/08	15:32
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08	15:32
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08	15:32
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	VT	03/14/08	15:32
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	VT	03/14/08	15:32
DICHLOROMETHANE (METHYLENE CHLORIDE)	V13	524.2R4.1		3	0.5	ND	ug/l	VT	03/14/08	15:32
STYRENE		524.2R4.1		100	0.5	ND	ug/l	VT	03/14/08	15:32
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08	15:32
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	VT	03/14/08	15:32
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	VT	03/14/08	15:32
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	VT	03/14/08	15:32
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	VT	03/14/08	15:32
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	VT	03/14/08	15:32
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08	15:32
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	VT	03/14/08	15:32
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	VT	03/14/08	15:32
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	VT	03/14/08	15:32
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	VT	03/14/08	15:32
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	VT	03/14/08	15:32
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	VT	03/14/08	15:32
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	VT	03/14/08	15:32

Analyte Count: 26

NETHERWOOD PLANT INFLUE	RAW	Collected 04/04/08

Report Details

Sample Number: ***CM18338*** *Sample Status:* *REPORT QUEUE*

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time
BENZENE		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08 21:46
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08 21:46
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	BC	04/09/08 21:46
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	1.0	ug/l	BC	04/09/08 21:46
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	BC	04/09/08 21:46
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	BC	04/09/08 21:46
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08 21:46
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08 21:46
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	BC	04/09/08 21:46
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	BC	04/09/08 21:46
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	BC	04/09/08 21:46
STYRENE		524.2R4.1		100	0.5	ND	ug/l	BC	04/09/08 21:46
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	2.8	ug/l	BC	04/09/08 21:46
	N3								
	ZZ								
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	BC	04/09/08 21:46
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	BC	04/09/08 21:46
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	BC	04/09/08 21:46
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	BC	04/09/08 21:46
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	BC	04/09/08 21:46
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	23.6	ug/l	BC	04/09/08 21:46
	N3								
	ZZ								
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08 21:46
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	BC	04/09/08 21:46
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	BC	04/09/08 21:46
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	BC	04/09/08 21:46
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	BC	04/09/08 21:46
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	BC	04/09/08 21:46
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08 21:46

Analyte Count: 26

2008 08020950 NJ 123 A

Starting Sample: CM18338
Report Date: 04/21/08

NETHERWOOD PLANT EFFLUE | EFF | Collected 04/04/08

Report Details

Sample Number: CM18342 *Sample Status:* REPORT QUEUE

	Qualifier Code	Method	State Code	MCL	Reporting Limit	Result	Unit	Analyst	Analysis Date / Time	
BENZENE		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08	22:19
CARBON TETRACHLORIDE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08	22:19
CHLOROBENZENE (MONO)		524.2R4.1		50	0.5	ND	ug/l	BC	04/09/08	22:19
cis-1,2-DICHLOROETHYLENE		524.2R4.1		70	0.5	ND	ug/l	BC	04/09/08	22:19
1,2-DICHLOROBENZENE (ORTHO)		524.2R4.1		600	0.5	ND	ug/l	BC	04/09/08	22:19
1,4-DICHLOROBENZENE (PARA)		524.2R4.1		75	0.5	ND	ug/l	BC	04/09/08	22:19
1,2-DICHLOROETHANE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08	22:19
1,1-DICHLOROETHYLENE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08	22:19
1,2-DICHLOROPROPANE		524.2R4.1		5	0.5	ND	ug/l	BC	04/09/08	22:19
ETHYLBENZENE		524.2R4.1		700	0.5	ND	ug/l	BC	04/09/08	22:19
DICHLOROMETHANE (METHYLENE CHLORIDE)		524.2R4.1		3	0.5	ND	ug/l	BC	04/09/08	22:19
STYRENE		524.2R4.1		100	0.5	ND	ug/l	BC	04/09/08	22:19
TETRACHLOROETHYLENE (PCE)		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08	22:19
TOLUENE		524.2R4.1		1000	0.5	ND	ug/l	BC	04/09/08	22:19
trans-1,2-DICHLOROETHYLENE		524.2R4.1		100	0.5	ND	ug/l	BC	04/09/08	22:19
1,2,4-TRICHLOROBENZENE		524.2R4.1		9	0.5	ND	ug/l	BC	04/09/08	22:19
1,1,1-TRICHLOROETHANE		524.2R4.1		30	0.5	ND	ug/l	BC	04/09/08	22:19
1,1,2-TRICHLOROETHANE		524.2R4.1		3	0.5	ND	ug/l	BC	04/09/08	22:19
TRICHLOROETHYLENE (TCE)		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08	22:19
VINYL CHLORIDE		524.2R4.1		2	0.5	ND	ug/l	BC	04/09/08	22:19
XYLENES, TOTAL		524.2R4.1		1000	0.5	ND	ug/l	BC	04/09/08	22:19
1,3-DICHLOROBENZENE (META)		524.2R4.1		600	0.5	ND	ug/l	BC	04/09/08	22:19
1,1-DICHLOROETHANE		524.2R4.1		50	0.5	ND	ug/l	BC	04/09/08	22:19
METHYL tert-BUTYL ETHER (MTBE)		524.2R4.1		70	0.5	ND	ug/l	BC	04/09/08	22:19
NAPHTHALENE		524.2R4.1		300	0.5	ND	ug/l	BC	04/09/08	22:19
1,1,2,2-TETRACHLOROETHANE		524.2R4.1		1	0.5	ND	ug/l	BC	04/09/08	22:19

Analyte Count: 26

2008 08020951 NJ 123 A

Starting Sample: CM18342
Report Date: 04/21/08